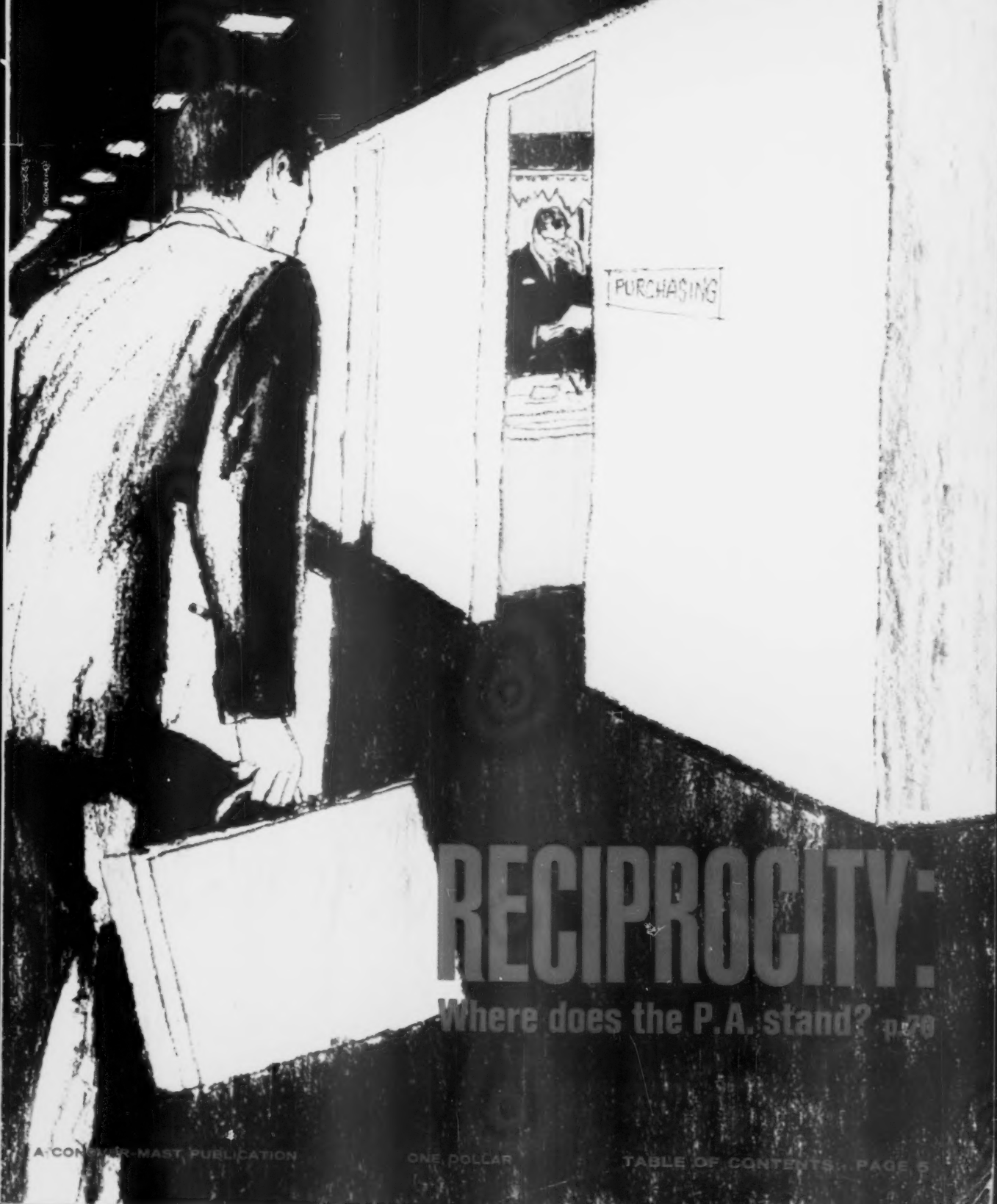


NOVEMBER 20, 1951

PURCHASING

THE METHODS AND NEWS MAGAZINE FOR INDUSTRIAL BUYERS



RECIPROCITY:

Where does the P.A. stand? p. 78

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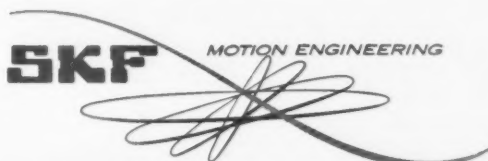
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Reciprocity: Where Does the P.A. Stand? 70

Purchasing executives may as well face it—reciprocity is here to stay. Unless purchasing learns how to live with it, and how to govern it, the procurement function may be submerged. This special 10-page report offers specific suggestions to help purchasing look reciprocity in the eye. And don't miss the results of PURCHASING Magazine's survey in which 300 purchasing agents express their views on the trade relations problem (see pages 76 and 77).

Good Vendor Relations Start in the Lobby 80

See how Aero-Jet General designed its new purchasing lobby with its vendors in mind. Of special note are the interview rooms adjacent to the lobby which provide privacy, give vendors enough room to do a real selling job.

How STL Tells Purchasing's Story 82

The purchasing department at Space Technology Laboratories has done an excellent job of solving the tough-nut problem of how to get its story across to engineers and operating departments. It uses a series of "How STL Buys" booklets (several are shown in this article) to do the job.

Can the Buyer Demand Satisfaction? 86

In most cases the law upholds the buyer in cases where he is dissatisfied with goods he has purchased. But there are exceptions buyers should know about.

Time Control Boosts P.A.'s Efficiency 89

A unique system that adds minutes to every hour.

Forms Forum 90

Sample forms from other companies that may help you solve your paperwork problems.

Do You Know How to Get Freight Rates Reduced? 92

Many P.A.'s don't realize that they can sometimes cut down on transportation charges by getting a change in freight classifications for the goods they buy and ship.

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How **AMOCOOL*** Transparent Coolant

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Eliminate reworking because of rust, reduce wheel loading and extend intervals between wheel dressings; do these and you increase profit per unit, explains Detroit Edge Tool president, Dan Ebbing, to P. E. "Pappy" Stratton of American Oil. Sam Vineh, operator, looks on.



by PAUL E. "PAPPY" STRATTON About the Author.

"Pappy" Stratton has been providing technical help on lubrication and metalworking problems to customers in the Detroit area for nearly all of the twenty-five years he has been working for the company. In addition to having this store of practical experience to help him, Pappy has completed the Company's Sales Engineering School.

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and drilling equipment has been converted to AMOCOOL Transparent Coolant.

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Pulse of Business

Auto Sales, Consumer Buying Key to Upturn

THE BULGE IN THE ECONOMY that virtually every economist and businessman predicted for the fall failed to materialize in the first half of this usually buoyant season. **The remaining weeks of 1961, however, could still redeem the rosy forecasts** if automotive sales gain momentum and consumers unleash a buying splurge in the Christmas shopping period.

What are the prospects of a late-blooming boom? Even the experts—who had been overoptimistic about the recovery—are not so sure of the outlook. For example, the Federal Reserve Bank of New York in its November economic review said: "No clear evidence is as yet at hand to indicate how much momentum the economy will gain during the fall seasonal upturn."

Statistics Show A Lack of Bounce

The lack of bounce is evident in these recent statistics:

- The decline of \$113 million in total installment debt during the third quarter of this year. The amount now outstanding is approximately \$42.6 billion. Consumer credit has dropped about \$1.2 billion so far this year, compared with an expansion of \$6.6 billion in a prosperous year such as 1959.

- The continuance in October, for the eleventh straight month, of seasonally adjusted unemployment at the unsatisfactory rate of almost 7%.

- The failure of U. S. exports to maintain the sharp upward course achieved in the first half of the year. In September, exports dipped to \$1.613 billion, down 2% from August volume—which in turn had been 3% below July.

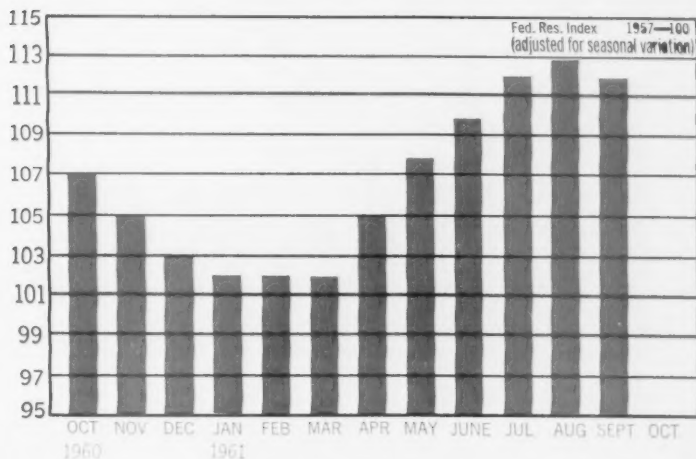
- The continued lag in railroad freight loadings, now trailing last year's level by more than 8%.

There is just one word to describe the economy's performance in recent weeks: disappointing. Because of consumers' general hesitance to buy, **businessmen continue cautious.**

Up to now, economists have blamed strikes and abnormal weather conditions in many parts of the country for the slackness in the recovery. But by and large, those factors are no longer in the picture. **Uncertainty has been removed** from the auto industry's

Industrial Production Falls Slightly

The Federal Reserve Board's Industrial Production Index declined a point in September to 112 (1957=100). Durable manufacturing dropped three points, while the nondurable index advanced a point.

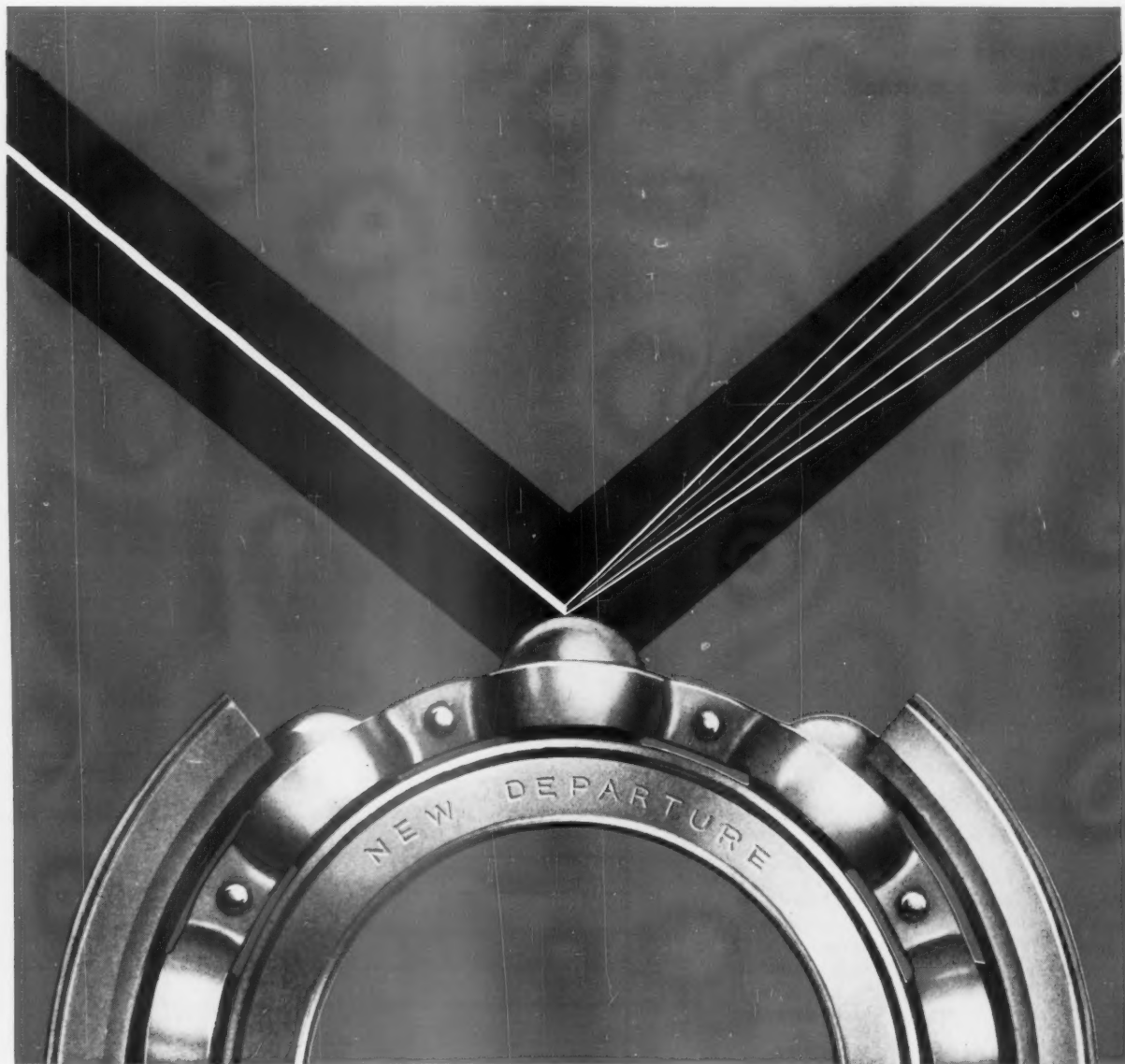


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Pulse of Business

outlook with the signing of new and expensive labor pacts by Detroit's Big Three. And cool, crisp weather has chased the remnants of summer from the Midwest and parts of the East where retail sales had been lagging.

However, some encouraging figures have been released recently. They include:

- Construction outlays—despite the sluggishness in housing—held steady in October at an annual rate of \$58.4 billion, maintaining September's record pace.
- Manufacturers' new orders edged up to another new high in September, rising by \$100 million to \$32.3 billion.
- Inventories held by manufacturers, wholesalers, and retailers increased \$600 million in September, the biggest monthly rise since May 1960, bringing the total to \$92.7 billion.

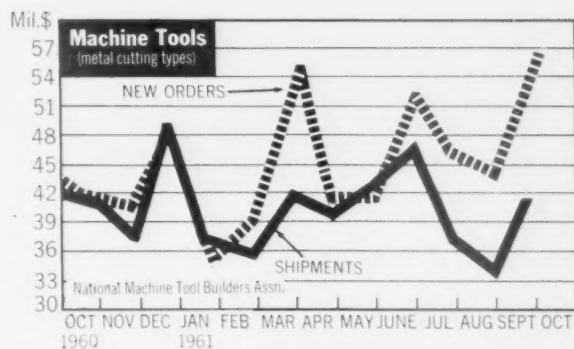
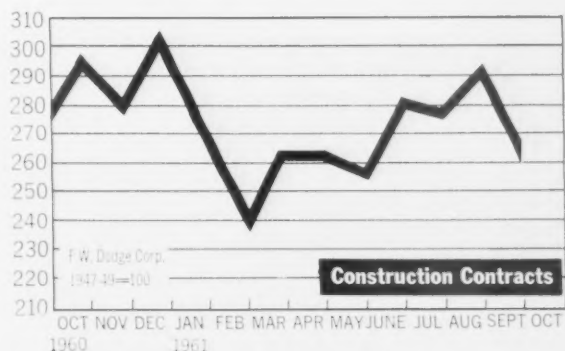
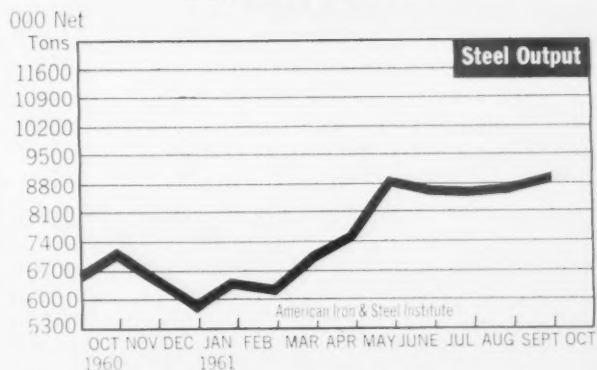
At best these indicators point to nothing more hopeful than a **sustained moderate advance in the economy**, rather than the vigorous boom that many had expected would develop toward the latter part of 1961.

Although there has been little encouragement in the monthly statistical reports from Washington (always a month or more behind), recent unofficial data suggest that a somewhat more pronounced improvement in business activity may finally be getting under way. Since mid-September, for example, **consumer spending at the nation's department stores has risen noticeably** and purchases of automobiles have been stepped up.

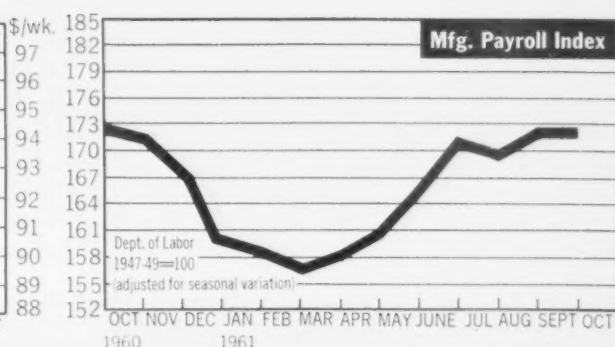
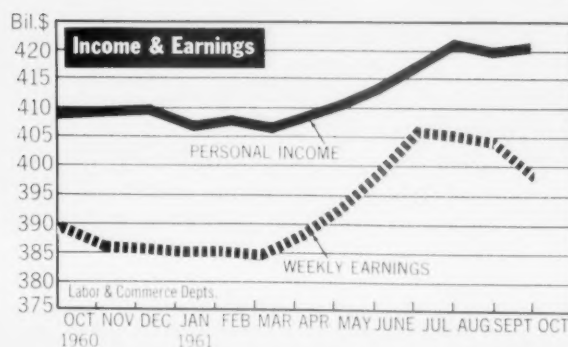
Department-store volume is still maintaining a 2% lead over 1960. A fair-sized enlargement of these sales in the next few weeks would send **general retail volume to a moderate gain over last year's peak**.

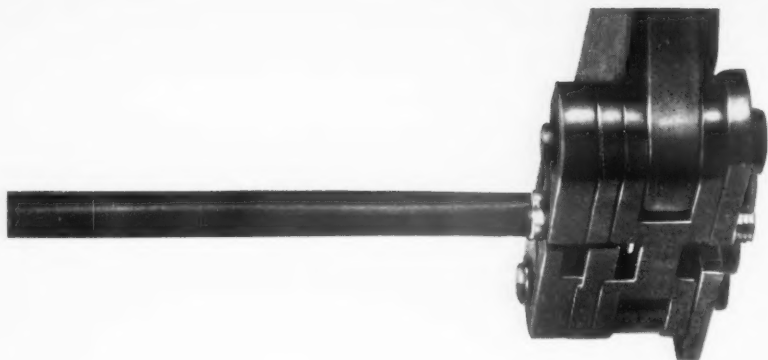
Automotive dealers may be unduly optimistic, but they report that sales now are going very well. Many are predicting that 1962 will be another banner sales year like 1955. Unless the market collapses again in January as it did this year, industry hopes for sales of 6.5 mil-

PRODUCTION



LABOR





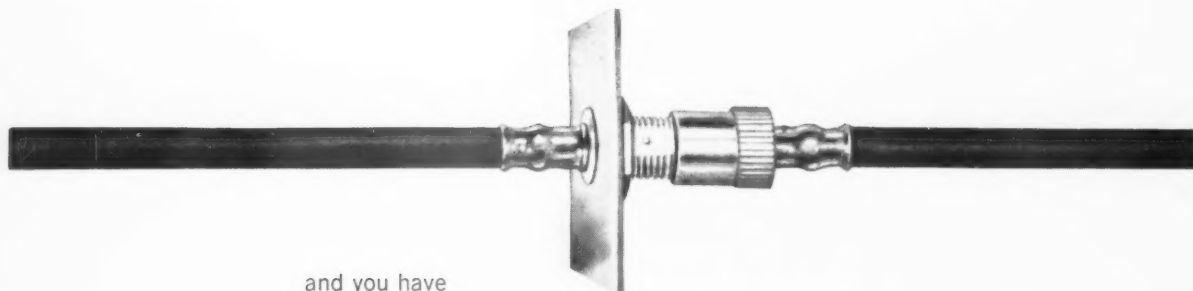
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Pulse of Business

TRADE

lion or more of 1962 models seem well-founded.

The ebullient mood of dealers has led Detroit automotive manufacturers to boost production quotas. Car assemblies in November may reach 680,000 units—the largest for any month since January, 1960. This would be almost 85,000 more units than were turned out last November.

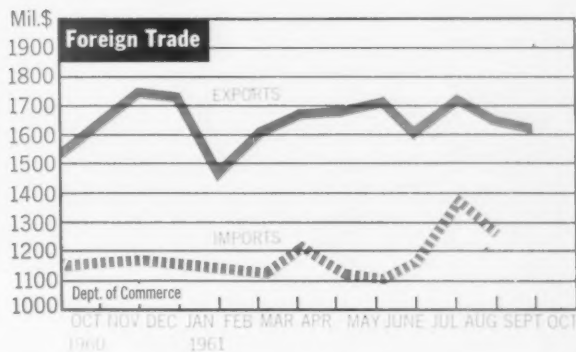
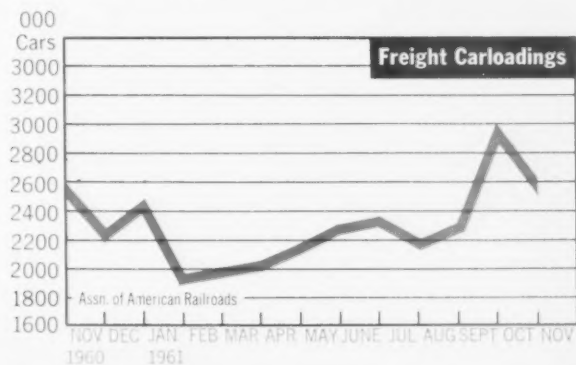
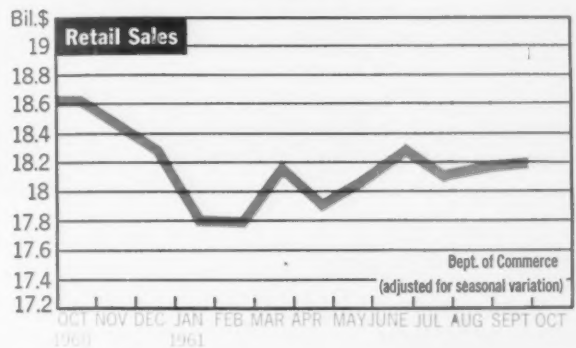
The improved operating trend in Detroit has been reflected in a reversal in the steel industry's production curve. After a gentle three-week downturn, the steel operating rate moved up in the early days of November, running slightly above the 70% level.

Will the improvement persist? Steelmen, disappointed with their sales performance in September and October, have their fingers crossed. Most believe that this month's business may top October sales by perhaps 5%.

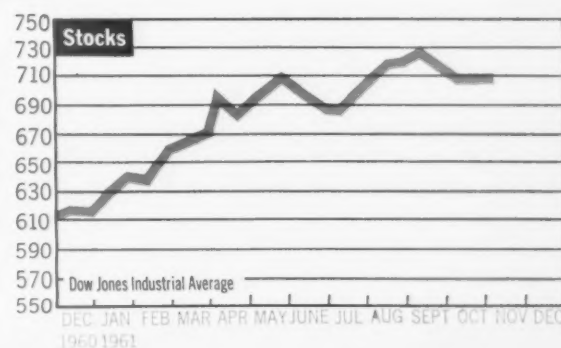
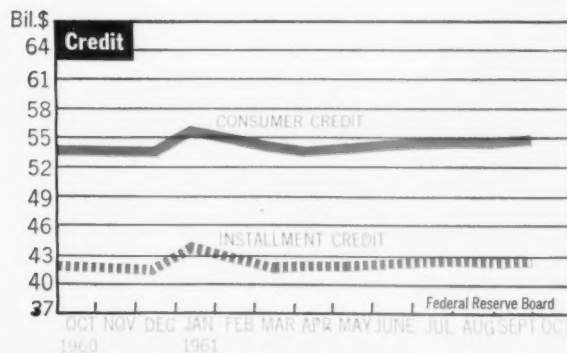
Added to the better retail, automobile, and steel sales prospects are indications that defense orders from Washington will be stepped up substantially and should become a progressively more buoyant factor in the upcoming months.

Business inventories are expected to expand by \$6 billion next year to meet both greater government and civilian demand. The accumulation of inventories, of course, will stem partly from improved business conditions and partly from fears of a possible steel strike in mid-'62 when the labor contracts, signed in January 1960, run out.

Another factor that could aid the business expansion next year would be passage of the Administration's bill providing for a tax credit of 8% for business investment in new plant and equipment. An offsetting worry, however, is the realization that if business does not improve as expected and produce federal revenues of at least \$90 billion in the next fiscal year, another serious budget deficit with all its complications and problems will face the nation.



FINANCE

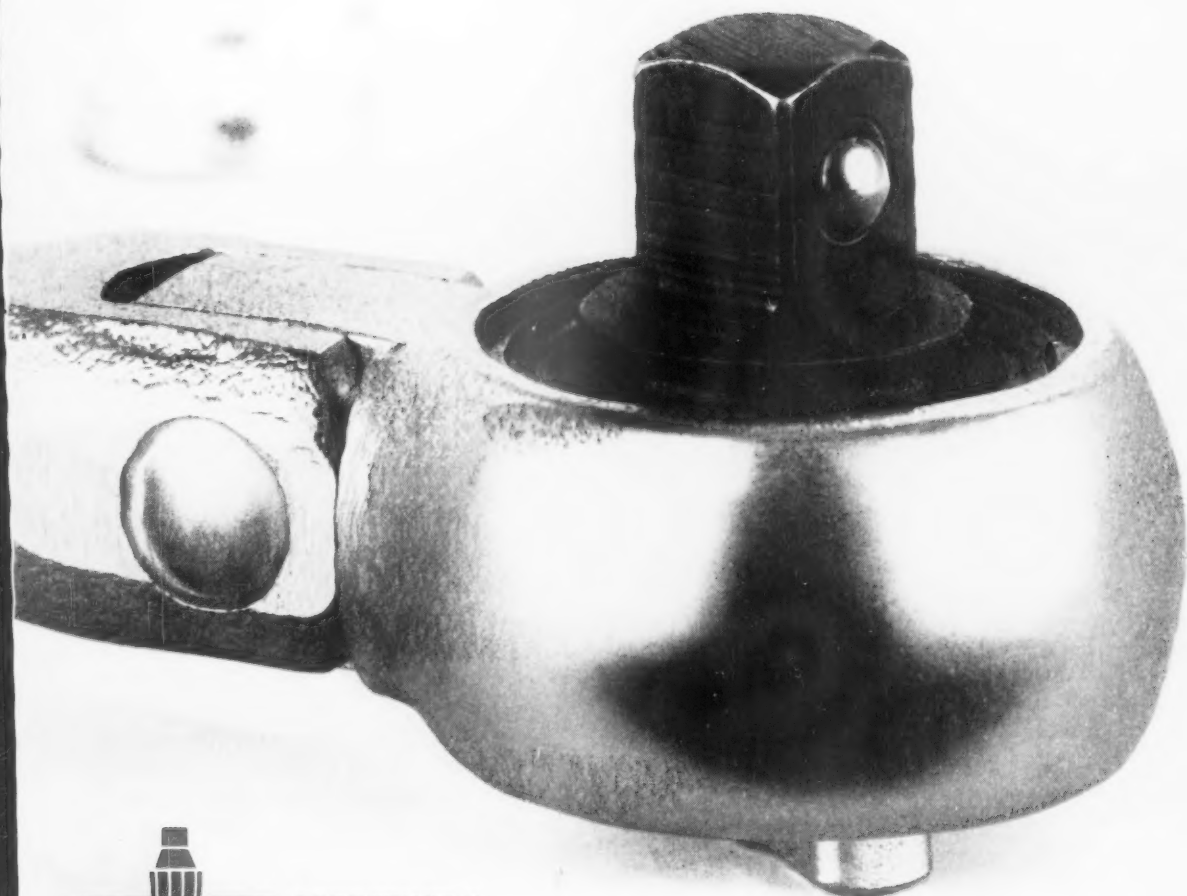


250,000 full turns, more than a lifetime of service, and the amount of wear on ratchet drive lugs, or tangs, is practically unnoticeable. Corners remained sharp and clean and the surface unmarred.

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ARISTOLOY STEEL DIVISION



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Straws in the Trade Wind

► **TRUCK TIRE PRICES LOWER**—Prices of truck tires were reduced 5% to 23.2% by Good-year Tire & Rubber Co. recently. The supplier says that the cuts were made "to bring our entire list and dealer prices more in line with actual selling prices in the marketplace."

► **SBA PROGRESS REPORT**—Government prime contracts to small firms more than doubled in September—in both number and dollar value—over the similar month last year. Under the Small Business Administration's cooperative set-aside program with federal procurement agencies, 4836 military and civilian contracts valued at \$142.3 million were awarded to small companies. During the third quarter of 1961, \$378.8 million worth of contracts were issued under this program, compared with \$286.3 million in the similar period last year.

► **BETTER BUSINESS BUT NO BOOM**—Although the economic "figures are encouraging and a good tone of optimism prevails," the N.A.P.A. business survey committee sees "no boom at least for the balance of this year." It notes that "spotty weaknesses persist." The committee also says that buyers "are reviewing purchasing and inventory policies on a day-to-day, hour-by-hour basis."

For the P.A.'s Hot File . . .

Considering putting your own fleet of trucks on the road? It might help you to take a look at the transcript of a comprehensive panel discussion on the advantages and disadvantages of private carriage. Proponents of both sides discuss such areas as flexibility, costs, and service. The booklet is available for \$1 from the Private Carrier Conference, 1616 P Street, N.W., Washington, D.C.

► EMPHASIZE PURCHASING'S ROLE—

The role of purchasing as a profit-making function was emphasized by Harold Zimmerman, director of procurement for Kearfott, at a meeting of tool and die executives. Zimmerman says that "Too many firms are losing money while their sales are increasing, due to faulty buying practices." This trend has helped purchasing evolve into one of the key operations in many companies.

► COAL CONSUMPTION RISING—

Bituminous coal consumption will reach 417 million tons next year, predicts the National Coal Association—up from an estimated 399 million tons in 1961. Last year, 416.9 million tons were used by industry and consumers. Major users in '62 will continue to be electric utilities, which are expected to consume 188 million tons. Ten million tons will probably be exported to Canada in '62, just about the same as this year.

► FASTENER SHIPMENTS STEADY—

Shipments of industrial fasteners, a good barometer of short-term business conditions, remained steady in September. The index prepared by the Industrial Fasteners Institute was unchanged at 95 (1956-58=100). Previously, the index had risen for four consecutive months.

► BANNER CONSTRUCTION YEAR—

The construction industry will enjoy its best year in 1962, says F. W. Dodge Corp. Total construction contracts will total nearly \$40 billion—up 7% from the estimated \$37.3 billion for this year. Contracts for non-residential building are expected to rise 4% to \$12.7 billion.

► BUSINESS INCORPORATIONS ADVANCE

—The number of new business incorporations (seasonally adjusted) continued to climb slowly in September. New business charters, says Dun & Bradstreet, rose 3.4% from the previous month to 16,405. This is the highest total for any month since mid-1959.

► ALCOA RAISES MINIMUMS —

Minimum poundage limits on orders for aluminum sheet and plate at its mills have been hiked by Alcoa. This will relieve the mills of small orders and boost the amount sold by distributors.

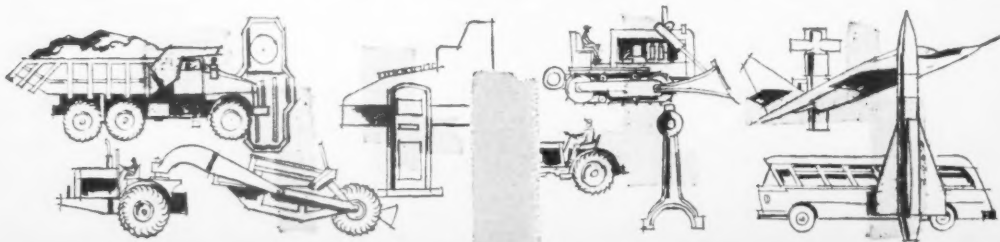
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**FORGINGS AND
DEEP DRAWN STAMPINGS**

Pulse of Business

Sales, Inventories, Orders

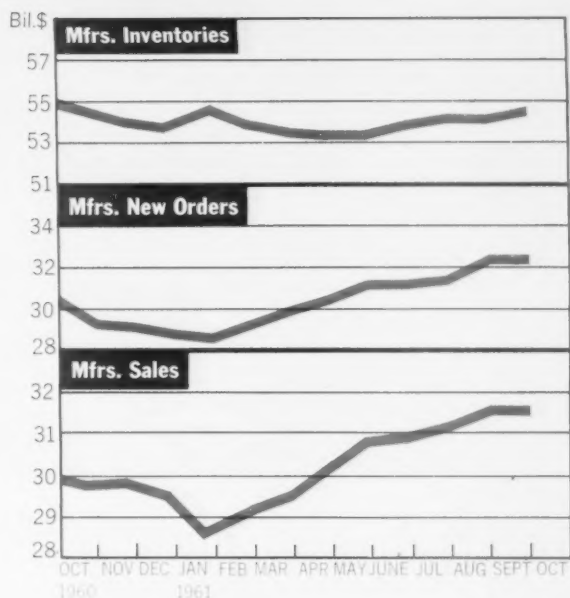
● New Orders Set Record; Stocks Rise \$500 Million

MANUFACTURERS' new orders edged up to a new record in September, reports the Commerce Department. Sales were almost unchanged, while inventories rose fractionally.

Seasonally-adjusted new orders totaled \$32.3 billion, up \$100 million from the previous month. Larger-than-average increases were scored by non-electrical machinery and primary metals producers.

Sales, at \$31.5 billion, were virtually identical with the total a month earlier. Durable goods sales declined 1% but the volume of non-durable goods improved slightly.

Inventories amounted to \$54.5 billion—a rise of \$500 million. Most of the expansion was in inventories of raw materials.



Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)

	1960	1961				
	Sept.	May	June	July	Aug. (r)	Sept. (p)
All manufacturing industries.....	30,070	30,780	30,900	31,160	31,460	31,470
Durable-goods industries.....	14,400	14,580	14,690	14,790	15,050	14,980
Primary metal.....	1,920	2,130	2,070	2,200	2,220	2,220
Fabricated metal.....	1,650	1,690	1,720	1,700	1,740	1,690
Machinery.....	4,640	4,820	4,830	4,880	4,990	5,000
Transportation equipment.....	3,570	3,290	3,410	3,320	3,360	3,300
Lumber and furniture.....	810	840	840	870	870	830
Stone, clay, and glass.....	730	720	740	760	790	800
Non-durable goods industries.....	15,670	16,200	16,210	16,360	16,410	16,490
Food and beverage.....	4,690	4,800	4,700	4,780	4,750	4,890
Tobacco.....	390	430	410	430	430	410
Textile.....	1,200	1,220	1,270	1,240	1,230	1,270
Paper.....	1,090	1,160	1,180	1,170	1,180	1,190
Chemical.....	2,300	2,470	2,510	2,500	2,570	2,540
Petroleum and coal.....	3,200	3,310	3,220	3,290	3,220	3,220
Rubber.....	510	500	500	470	520	530

Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)

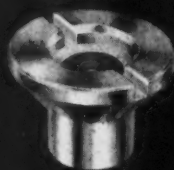
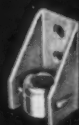
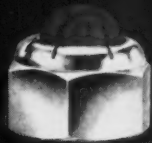
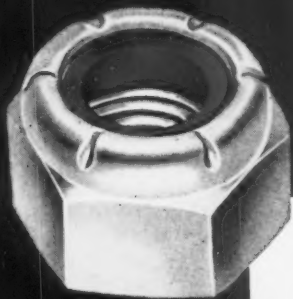
	1960	1961	1961	1961	1961	1961
	Sept.	May	June	July	Aug. (r)	Sept. (p)
All manufacturing industries.....	54,710	53,370	53,360	53,550	54,030	54,450
Durable-goods industries.....	31,840	30,150	30,200	30,370	30,800	31,090
Primary metal.....	4,640	4,510	4,600	4,660	4,630	4,670
Fabricated metal.....	3,270	2,930	2,920	2,950	3,020	3,120
Machinery.....	10,530	10,200	10,140	10,170	10,190	10,250
Transportation equipment.....	7,240	6,630	6,640	6,640	6,950	6,970
Lumber and furniture.....	1,940	1,800	1,800	1,800	1,810	1,850
Stone, clay, and glass.....	1,460	1,420	1,430	1,450	1,480	1,490
Non-durable goods industries.....	22,870	23,220	23,160	23,180	23,230	23,350
Food and beverage.....	4,980	5,070	5,050	5,090	5,120	5,150
Tobacco.....	2,000	1,970	1,960	1,960	2,000	2,040
Textile.....	2,640	2,760	2,750	2,750	2,740	2,740
Paper.....	1,640	1,660	1,670	1,660	1,680	1,700
Chemical.....	4,160	4,240	4,240	4,250	4,240	4,200
Petroleum and coal.....	3,260	3,370	3,370	3,380	3,380	3,430
Rubber.....	1,200	1,140	1,130	1,130	1,130	1,120

Manufacturers' New Orders Seasonally Adjusted (Millions of Dollars)

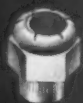
	1960	1961	1961	1961	1961	1961
	Sept.	May	June	July	Aug. (r)	Sept. (p)
All manufacturing industries.....	30,400	31,090	31,100	31,330	32,180	32,290
Durable-goods industries.....	14,620	14,800	14,920	15,030	15,650	15,740
Non-durable goods industries.....	15,780	16,290	16,190	16,300	16,540	16,560

(r) Revised.

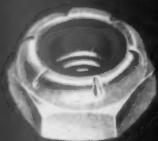
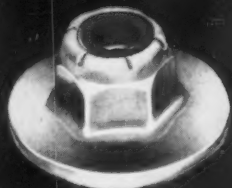
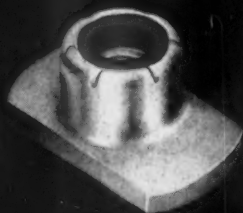
(p) Preliminary.



EVERYTHING'S SPECIAL



about these Elastic Stop® nuts...



...except their availability and ultimate cost to you.

Elastic Stop nuts come in hundreds of shapes and sizes. We have illustrated just a few to show you it is possible to choose a nut shape that will make your assembly job easier and faster.

How can you always be sure you have the real thing? Easy! The unique, instantly identifiable red nylon locking insert is your clue to an Elastic Stop nut's special brand of shakeproof, shockproof locking performance. Once you see "the ring of reliability" you know that *this* locknut is going to stay put . . . on any bolted connection . . . for as long as you want it to stay! It will not come off until it's wrenched off, and then it can be reused fifty or more times.

If your product's performance depends on tight bolted con-

nections or precise adjustments, Elastic Stop nuts are the best, lowest priced, reliability insurance you can buy. And in figuring "true costs" the final figure should never be based on initial price alone. Value analysis has repeatedly demonstrated that product breakdowns or serious field service problems attributable to fastener failure easily cost more than the modest price of an Elastic Stop nut. The *ultimate cost* of stop nut quality and performance can make them today's "best buy."

ESNA's 30-year background in design and production of self-locking nuts assures you the most complete line in the business. For complete flexibility to meet your size, shape or volume requirements call on ESNA.



ELASTIC STOP NUT CORPORATION OF AMERICA

2330 Vauxhall Road, Union, New Jersey, Dept. S64-1115

for the ring  of reliability

For More Facts Write No. 163 on Information Card—Last Page

Pulse of Business The Trend of Prices

- **Lead Demand Weak Despite 1/2 Cent Price Cut**
- **Prime Western Grade Paces Zinc Buying**

LEAD demand has not picked up despite the recent 1/2 cent-a-pound cut to 10 1/2 cents-a-pound. Even though the U. S. price is at the lowest level in 11 1/2 years, purchasing agents are apparently looking for even further price reductions.

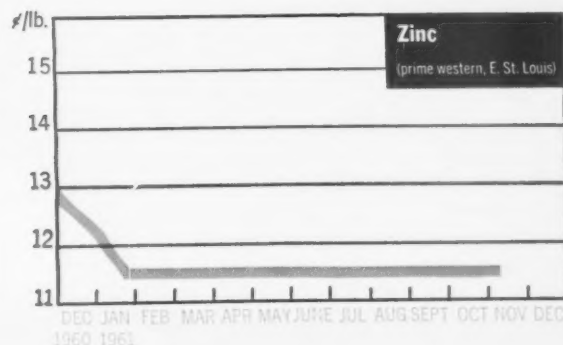
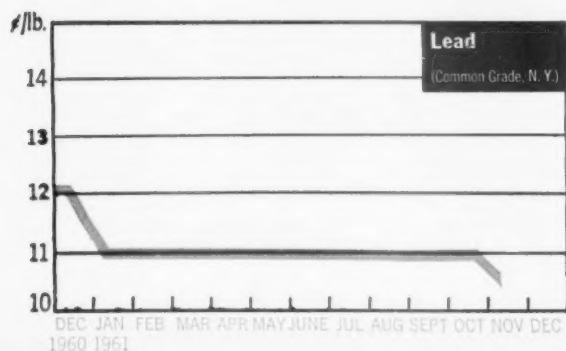
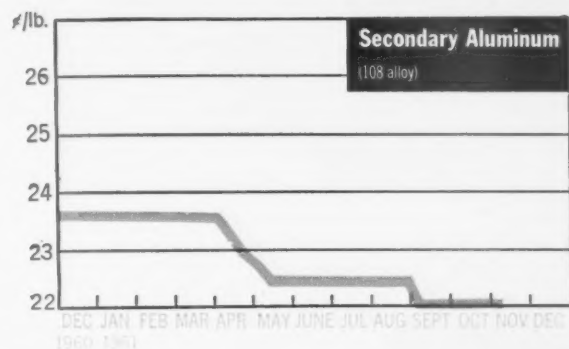
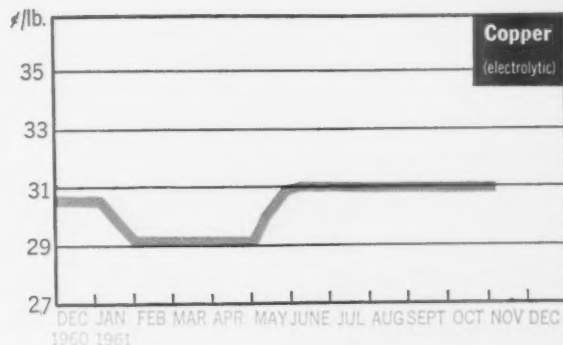
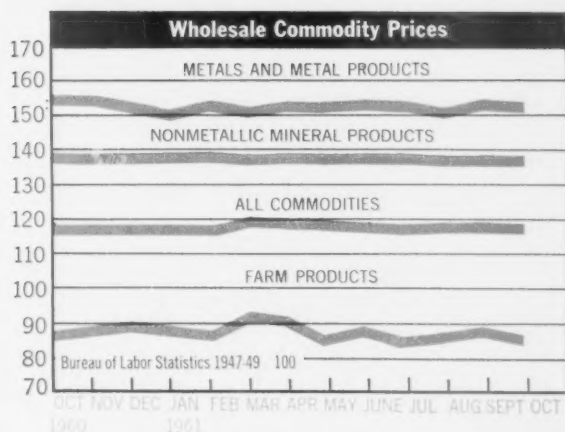
The new domestic lead price narrowed the margin between American and foreign prices. London prices have also been lower recently because of increased offerings from the Soviet bloc and disappointment at the failure of the International Lead-Zinc Study Group to take any action on curtailing production.

Lead inventories in the hands of domestic smelters and refiners dropped in September for the third successive month, says the American Bureau of Metal Statistics. Inventories totaled 304,133 tons—the lowest figure since November 1960.

Zinc: Buyers for steel mill galvanizers are continuing to place substantial orders for prime Western grades of zinc. High-grade zinc buying has picked up a bit in recent weeks, but discounts under the official price are still reported.

Stocks of refined slab zinc at U.S. smelters dropped sharply last month to the lowest level in 11 1/2 years. Stocks totaled 150,083 tons, says the American Zinc Institute, down 14,981 tons from September and the lowest since April 1960.

The worldwide zinc surplus this year will probably be in the neighborhood of 60,000 tons. Even though a production increase is slated





MOYNO® PUMPS

*progressing cavities pump
suspended solids, corrosives
and abrasive slurries*



MOYNO® PUMPS *turn problems into profits . . .*

Many materials, once considered "unpumpable," are now successfully handled by Moyno Pumps. Moynos have increased production and greatly lowered downtime on many jobs where they replaced rotary, centrifugal or piston type pumps which had run up prohibitive maintenance costs or failed completely. Moynos use a single moving pumping element . . . have no pistons, valves, high-speed impellers or other quick-wearing parts. The wide range of specially-resistant materials in which Moyno pumping elements are available assures exact job-tailored design for economical handling without excessive pump wear.

Moyno's unique "progressing cavities" move thin watery slurries, non-pourable abrasives, gnawing corrosives or suspended solids up to 1½" dia. The pump provides positive displacement . . . delivers uniform discharge without pulsation, agitation or turbulence. Moynos are available in many sizes, in capacities from 1/100 to 500 GPM and pressures up to 1000 PSI. Write today for new Bulletin 100-PG

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Acetic Acid	Copper Nitrate	Paper Pulp
Acid Mine Water	Creosote	Pickling Acids
Alcohol	Cutting Oil	Printing Inks
Alum (paper mill)	Cyanide of Potassium	Prunes
Aluminum Sulphate	Drilling Mud	Resin Plastic
Aromatic Hydro-carbons	Farrous Sulphate	Salt Brine 3% to 30%
Asphalt	Fuel Oil	Soda
Barium Sulphate	Fuming Sulphuric Acid	Shells
Bichloride of Mercury	Gasoline	Shrimp
Boiler Feed Water	Glue	Sewage
Bordeaux Mixtures	Hydrochloric Acid	Starch
Carbon Dioxide	Impregnating Compound	Sugar
Carbonic Acid	Lacquers	Sulfurous Acid
Calcium Chloride	Lard	Tar
Caustic Soda (lye)	Latex	Turpentine
Cement	Match Head Compound	Varnish
Citric Acid	Melasses	Vinagar
Clay Slurry	Nickel Sulphate	Wood Pulp
Coffee Grounds	Nitric Acid	Yeast

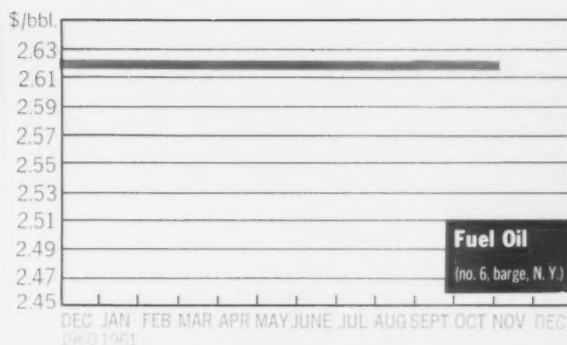
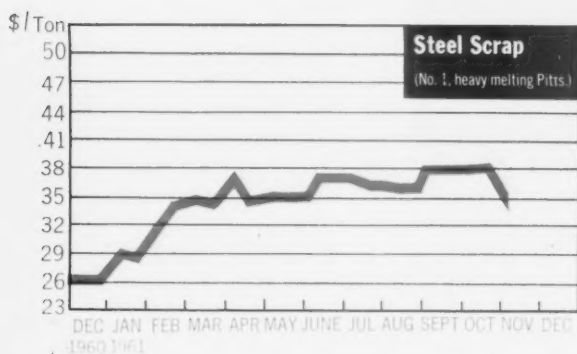
ROBBINS & MYERS, INC., Springfield, Ohio

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Subsidiary companies at: Memphis, Tenn.; Pico Rivera, Calif.; Brantford, Ontario.

For More Facts Write No. 164 on Information Card—Last Page

Pulse of Business

More on Price Trends



for next year, this will probably not boost the surplus since consumption is expected to rise an equal amount.

Tin: Tin prices have increased slightly in recent weeks and sales in New York, London, and Malaya have all been higher.

United Kingdom warehouse stocks of tin have fallen to the lowest level in over two years. Inventories at U. K. warehouses are now approximately 4400 tons.

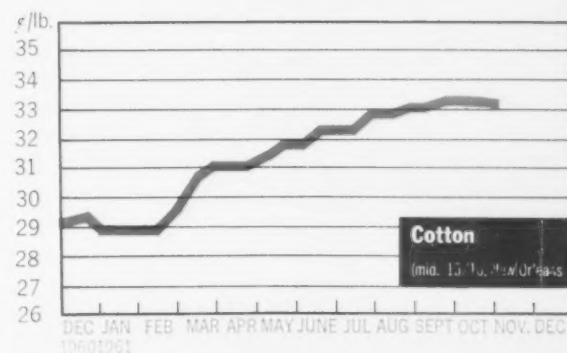
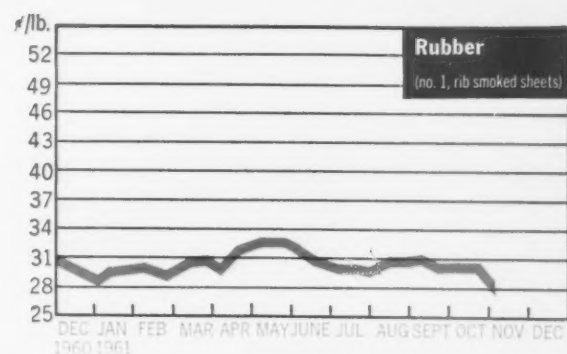
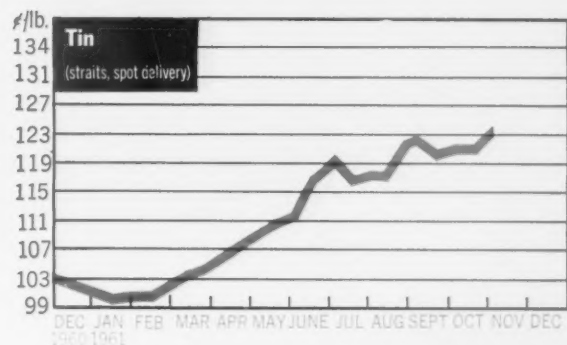
Reports are circulating that the tin producing countries will withdraw from the International Tin Council and form a "pool" of their own unless new price ceiling and floors are fixed at the next ITC meeting to be held in London in February. However, a representative of the Malayan Tin Council in Washington says that he has no evidence of any such move by the tin producers.

Copper: Vendors expect November copper sales to be about the same as October's. Copper purchasing for December delivery is currently progressing at a steady pace.

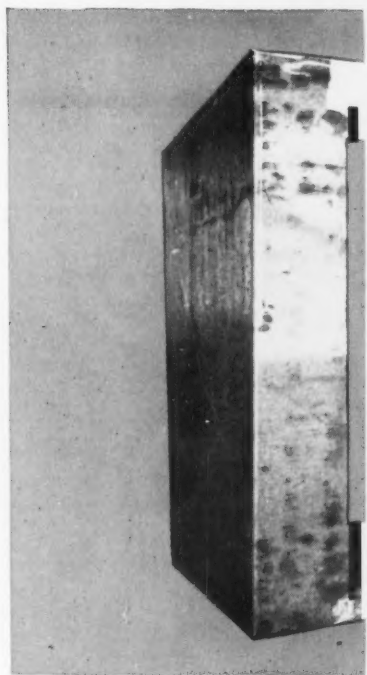
Brass buying continues to be slow. Suppliers are still waiting for P. A.'s in the automotive industry to boost their purchases.

Aluminum: Aluminum producers report deliveries have picked up somewhat recently. But demand in the fourth quarter is not expected to be up to earlier expectations.

Primary ingot production for 1961 will probably be between 1,875,000 tons and 1,900,000 tons. Shipments during the first three quarters of the year—spurred by a 10% increase in domestic deliveries—just about matched production during that period.



How METALOGICS* takes the P.A. off the high-cost hot seat!



The following case histories are typical of how Ryerson Metalogics helps hundreds of companies save money, improve products, and cut production waste.

Metalogics-trained Ryerson specialists help you value-analyze cost-soaring production problems—and they back up their suggestions with unbiased recommendations on exactly the right steel, aluminum or plastic to do each job best for less.

Little wonder, then, that more and more companies across the country find the high-cost hot seat a little cooler after inviting a Ryerson man to value-analyze specific problems, and come up with recommendations. Give him a call—perhaps he can help answer some of your high-cost questions.

***METALOGICS**—the Ryerson science of giving optimum value for every purchasing dollar.

PRODUCTION COSTS REDUCED 40%

Company was making chrome-plated table legs as a 3-piece weldment and having problems in holding concentricity and making proper preparation for the mirror finish. In addition, production costs were high.

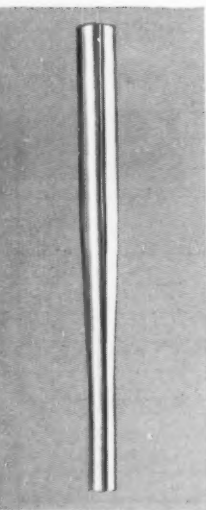
Ryerson recommended this Metalogical

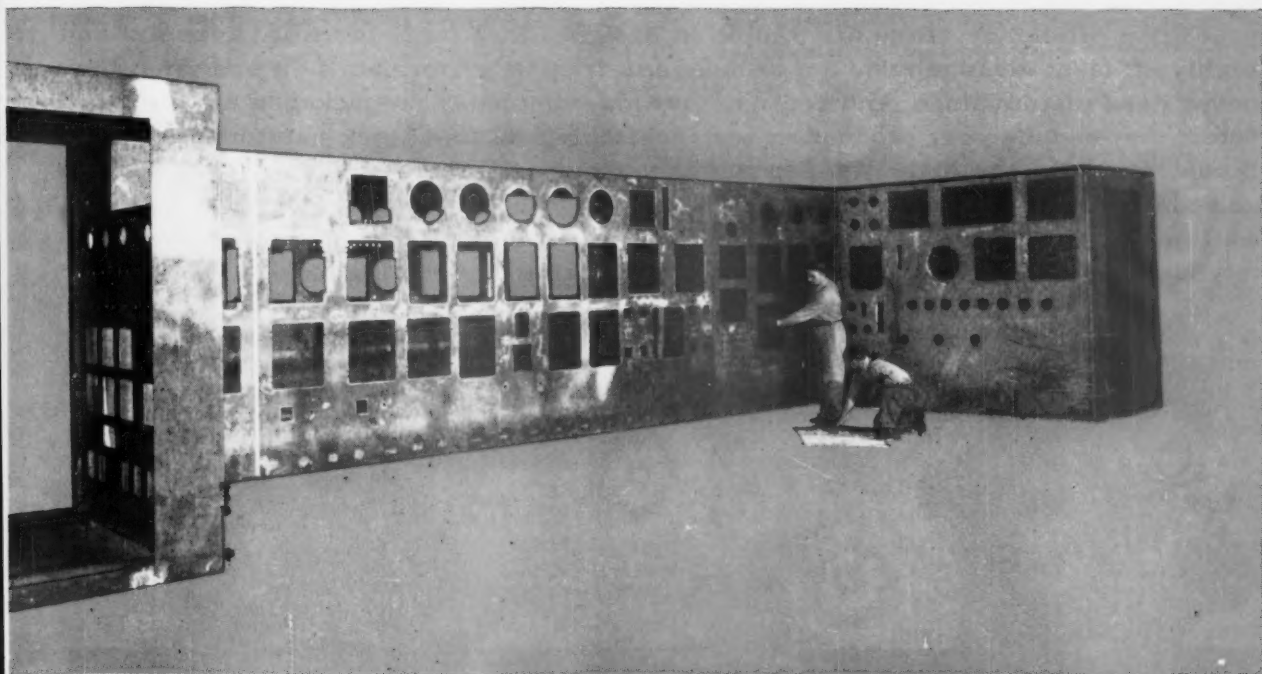
solution: make the legs from *one* piece of 3" O.D. soft-annealed, cold rolled, electric-welded tubing—half the length tapered to 2" O.D., holding concentricity to 1/32". Results: surface was just right for chrome plating, and production cost reduced.

THREAD GALLING ELIMINATED

Manufacturer made this special coupling of aluminum to gain the advantages of light weight, corrosion resistance and easy machining. But a problem developed due to galling of threads.

Following the recommendation of a Ryerson Metalogics specialist, the company hard-coated the parts by special low-temperature anodizing which produced a surface hardness of Rockwell 70 C. Galling was eliminated, and corrosion resistance increased. One more example of top technical help from Ryerson.





150 OPENINGS BURNED IN HUGE CONTROL PANEL ASSEMBLY

Expert Ryerson flame-cutters burned more than 150 openings in the steel plates that make up this huge control panel assembly.

Each opening had to be located and cut with extreme accuracy to permit proper installation of the complex

instrument system. Distortion had to be carefully controlled and a high degree of flatness maintained so that the plates would have a good appearance when painted. All such requirements were readily met by Metallogically-oriented Ryerson service.



One end of close-tolerance roll.
Note 3-step machining of bar.

SWITCH TO LEDLOY® STOPS TEARING...CUTS REJECTS

Manufacturer of roller coaters was having trouble machining C-1018 bar stock to produce a close-tolerance roll. Three-step machining was required at both ends of the bar, and tearing was frequent with up to five stops per cut to regrind the tool.

After studying the problem carefully, their Ryerson specialist recommended a change to Ledloy 300. Results from this fast-machining leaded steel: higher produc-

tion; longer tool life; rejects cut to a minimum.

Other steels for this coater, including angles, expanded metal, and cut-to-size side plates, are also supplied by Ryerson.

As the happy P. A. puts it, "Time and time again Metalogics takes me off the spot. It gives me technical help, plus convenient, dependable, single-source service on all my requirements."

RYERSON

JOSEPH T. RYERSON & SON, INC., MEMBER OF THE  STEEL FAMILY



STEEL • ALUMINUM • PLASTICS • METALWORKING MACHINERY

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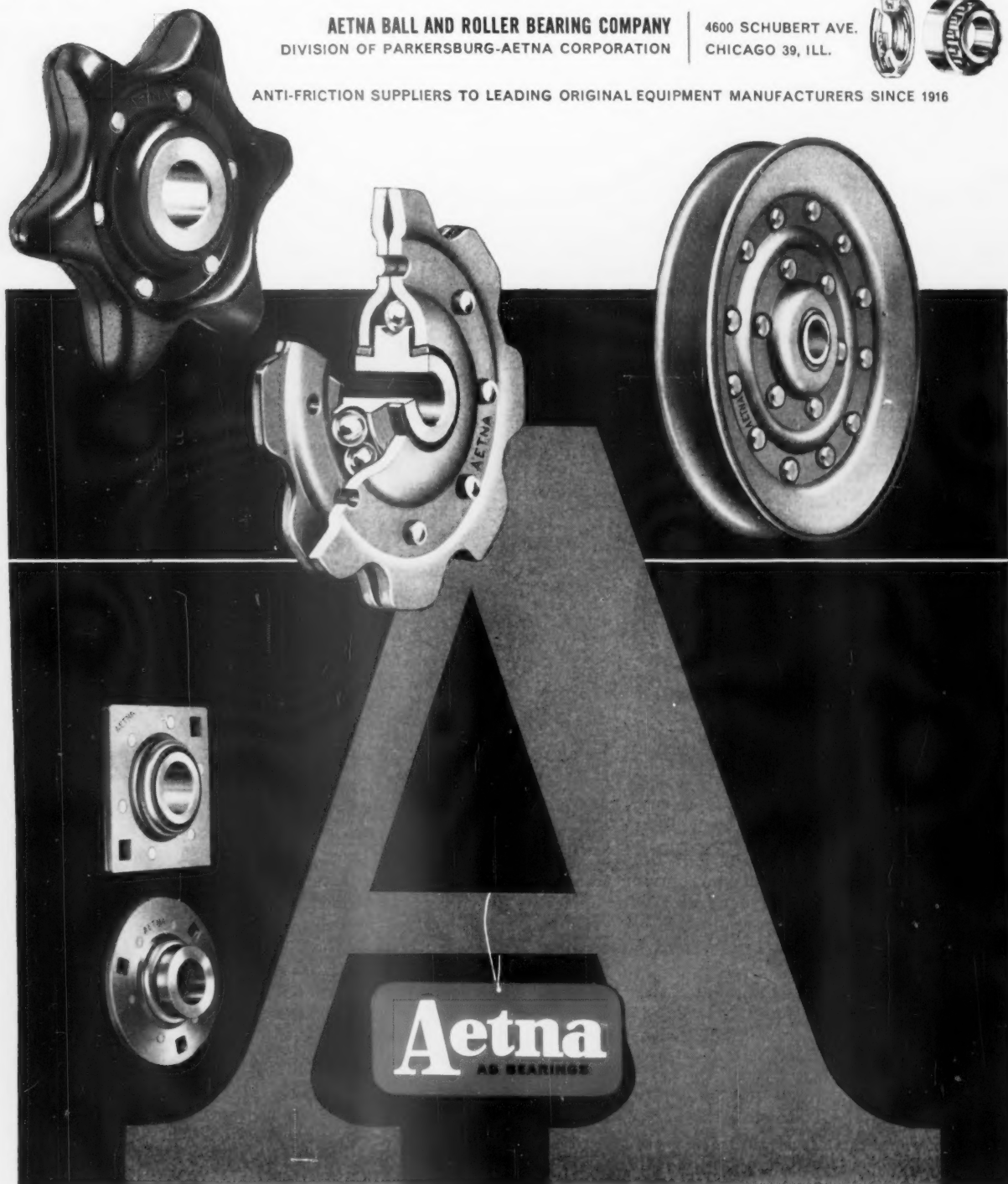
IF YOU USE BELTS OR CHAINS—Long-life, low-cost Aetna AG Series Idlers will increase your drive efficiency. Units are simple in design. Extra large lubricant capacity and highly efficient seals provide dependable anti-friction performance. In operation they never need maintenance. And because they are completely prepackaged and prelubricated, they reduce your production cost, assembly cost, and stock handling problems. Investigate, also, the Aetna AG Series Adapter units for shaft support and other drive and conveying applications. All AG Bearings are available in a wide variety of sizes and configurations. Call your Aetna representative listed in your classified telephone directory for information, or write for General Catalog and Engineering Manual.

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ANTI-FRICTION SUPPLIERS TO LEADING ORIGINAL EQUIPMENT MANUFACTURERS SINCE 1916



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Armed Services Asked To Consider Negotiated Contracts

THE MILITARY Procurement Advisory Committee—named by Senator George Smathers (D-Fla.) to study procedures for buying defense materials and equipment—has come up with a recommendation that could change military buying practices.

The committee wants military buyers to stop insisting that formally advertised procurement is preferable to negotiation. Instead, the committee wants greater emphasis placed on quality, delivery, and technical advances, rather than the lowest bid price.

This recommendation runs completely counter to the long-

time position of the Senate Small Business Committee and its Government Procurement Subcommittee. Senator Smathers is chairman of the subcommittee. At present, the Advisory Committee report does not have the official backing or approval of the Senate Small Business Committee—in fact, it has not been printed at government expense.

The report suggests that negotiated procurement has developed as the most appropriate method of military buying. The committee feels that the governing statute should be modified to eliminate the preference for advertising over negotiation.

The report also recommends that advertising have equal stature with negotiated contracts. And the committee feels that when sole source procurement is used justification should continue to be required to guard against misuse.

Who Owns the Rights?

Another area studied by the Advisory Committee was the rights acquired by the government to all data delivered to it under research and development contracts.

The committee recommends that the contractor be permitted to withhold proprietary data previously developed at private expense. It also suggests that subcontractors be permitted to furnish proprietary data directly to the government without passing through the prime contractor or any higher tier subcontractor.

The Renegotiation Act should be allowed to expire on June 30, 1962—its expiration date under present law—the committee recommends. If this suggestion is not followed, the committee calls for the application of renegotiation only to recapture unconscionable or windfall profits. In addition, it wants all contracts that contain price redetermination and incentive provisions to be exempted.

The committee found that the military procurement agencies are using a multitude of specifications—many of which are obsolete or unnecessary. It suggests that the armed services cooperate with industry to revise and simplify the use of military specifications.

Another point made by the



An advisory committee named by Florida's Senator Smathers wants the armed services to use negotiation as well as advertising in awarding military contracts. Military procurement officers would naturally go along with suggestions from President Kennedy that they change their buying procedures to fit in with the Smathers' committee proposal.

FIVE-WAY IMPROVEMENT

in grinding operations with the new cutting fluid, FIVE-STAR CIMCOOL, on the job in Pennsylvania.

(Company name on request)



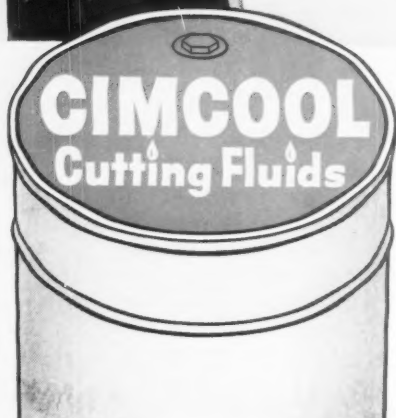
FIELD SERVICE REPORT

in the manufacture of air compressors. They had tried several cutting fluids but kept having problems with rust, rancidity and skin irritation.

Then we installed Five-Star Cimcool at 50-1 for a 3 months test, grinding iron, stainless steel, tool steel and aluminum. The results were excellent.

They have no rancidity, even after 3 months operation. They proved by laboratory testing that skin irritation had been eliminated. There was no rusting of iron or steel, no corrosion of bronze or aluminum parts. They not only saved money by not having to change the cutting fluid, but they doubled the pieces per dress. They are very enthusiastic about Five-Star Cimcool.

Herb Whitacre
Pittsburgh Office



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Production-Proved products of The Cincinnati Milling Machine Co.

FIVE-STAR CIMCOOL°—New, versatile "one-mix" cutting fluid, long-lasting, trouble-free.
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CIMCUT Concentrates (AA, NC, SS) — For every job requiring an oil-base cutting fluid.
ALSO—CIMCOOL Tapping Compound—CIMCOOL Bactericide—CIMCOOL Machine Cleaner.

For full information on the complete family of Cimcool Cutting Fluids, call your CIMCOOL Distributor. Or contact Cincinnati Milling Products Division, Cincinnati 9, Ohio.

°Trade Marks Reg. U. S. Pat. Off.

committee: when a prime contractor has received approval of his make-or-buy proposals, he should not be required to submit detailed information concerning the "buy" portion of a specific program.

The committee takes the position that approval of the purchasing system when the contract is awarded is adequate insurance that the prime contractor will:

(1) Broaden his base of subcontracts through competition.

(2) Give small business a fair chance to compete for subcontracts.

(3) Give proper consideration to the competence and capacities of supplying firms.

(4) Follow all the procedures set out in his make-or-buy exhibit.

Copies of the Military Procurement Advisory Committee report have been widely distributed to top officials of the Department of Defense, to the individual military services, and to members of Congress.

Congress is not likely to enact any laws significantly changing military procurement practices or policies. However, the Advisory Committee recommendations could influence military procurement officials who are constantly reviewing the Armed Services Procurement Regulations.

● Pace of Recovery Is Slower Than Forecast

The recovery tempo has disappointed government analysts who had forecast that the GNP in the fourth quarter would be at the \$540 billion level.

The outlook now is for the economy to fall several billion dollars short of that because of what appears to be a period of business hesitation. This situation can be compared with the eye of a hurricane. A sharp rise is behind us and an even sharper advance is ahead of us, but the immediate present is short of previous expectations.

Plant and equipment invest-

ment hasn't shown the vitality expected of it. Consumer spending has not reflected the \$17 billion annual rate of increase in personal income.

The current lull has injected a note of caution into the flamboyant forecasts that have been released by top Department of Commerce officials. Commerce Department economists had suggested a range of economic figures that might be expected in the second and third quarter of this year. However, the top officials, in their public statements, used the most optimistic estimates.

On the assumption that the more conservative view will be accurate, the GNP in the current quarter will still be in the \$535 billion area. It is expected to rise by \$15 billion in the first quarter of 1962, with a similar increase in the second quarter.

These projections would bring the GNP level to \$565 billion by mid-'62.

● 3Q Inventories Rise More Than \$1 Billion

Book values of manufacturers' inventories increased by \$1.25 billion in the third quarter over the second quarter. A further increase of \$1.1 billion is expected in the fourth quarter.

Department of Commerce inventory analysts say that the buildup of manufacturers' inventories is typical of a recovery cycle. Currently, stocks are moving up faster than during the inventory buildup in the 1958 recovery period.

Sales had been advancing at a faster rate than the inventory buildup. As a result, the stock-sales ratio has declined from 1.8 to 1 a year ago to roughly 1.7 to 1 now.

At the present the increase in sales is in rough balance with the rate of inventory accumulation. For the period ahead, government forecasters expect the level of inventories and sales to remain in relative balance.—
A. N. Weckler.

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REQUIREMENTS
FROM
.010"
TO
.000125"
THIN
IN**

BRASS
COPPER
STAINLESS STEEL
NICKEL SILVER
PHOSPHOR BRONZE
BERYLLIUM COPPER
HI-TEMPERATURE METALS
Tin Coated Metals
and Rare Metals

and from .020" to
.000125" thin in

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one source for reliability,
delivery, and technical
assistance. Write for
confidential analysis of
your specific require-
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NEW Simonds Comfort-Grip Handle Needle Files



For fine die and toolmaking, Simonds new PLASTIC-HANDLED Swiss Pattern Needle Files provide more positive grip and real comfort. Make intricate filing easier and less tiring.

Safer, too, they can't slip, scratch or cut filer's hand — eliminate make-shift handles, pads, tape, etc.

Set of twelve different shapes, furnished in handy "hang-up" or "fold-away" plastic kit, adds convenience, comfort and safety to well-known Simonds Needle File quality.

Now available from your Simonds Distributor as part of the full line of Simonds Swiss Pattern Files.

Size	Cut
4"	0, 2, 4, 6
5½"	0, 2, 4, 6
6¼"	0, 2, 4, 6

*In 4" length, Oval is furnished instead of Crossing.



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Oil Producing Nations Demand Concessions

SUSPENSION OF negotiations between the Iraqi Government and the Iraq Petroleum Company on revision of the terms of the company's concessions has not attracted much attention here. Yet the course of the discussions points to a potentially far-reaching change in the future relationships of oil producers and the governments on whose territories they operate.

At the time of the move by the Mossadegh regime in Iran against the Anglo-Iranian Oil Company, nationalist pressure for a greater share of oil revenues was made more effective because of relatively tight oil supplies. In addition, continuing currency difficulties made it hard for several countries to take advantage of U.S. oil because of dollar shortages.

Could Shift the Balance

Now, however, even though there is an oil surplus, and the distinction between hard and soft currencies is virtually nonexistent—Iraqi authorities are still making a sustained attempt to revise the Iraq Petroleum Company's concession. Such a change would inevitably be reflected in other parts of the Middle East and would shift the balance in favor of producing governments.

Up to now, the attempt to set up a coordinated and unified body representing the oil-producing countries of the Middle East, has not been a success. The chances of any individual government acting against its own immediate advantage to strengthen the bargaining position of another Arab country seems far-fetched—especially with oil in such adequate supply and with new producers, such as Libya, anxious to carve out a share of the market for themselves.

Nevertheless, once the growth in demand for oil catches up with supply, which is conceivable before the end of this decade, the balance of negotiating advantage would also shift. A concerted front by Middle Eastern producers would then be-

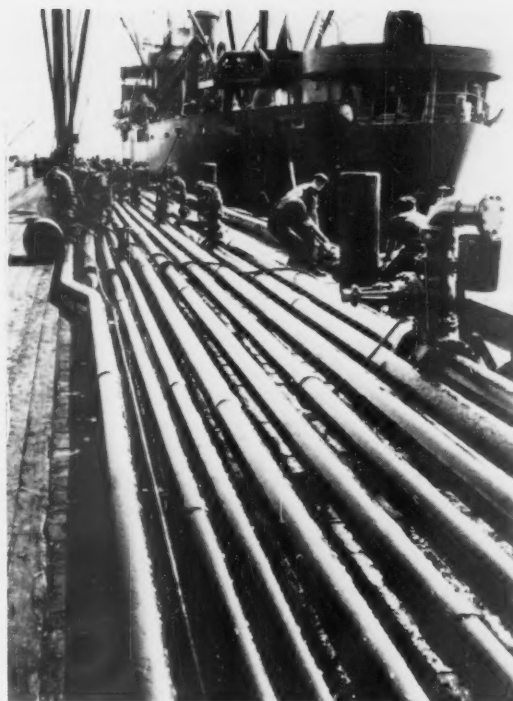
come more probable. The threat of an interruption of supplies from a particular country would once again acquire some force as a bargaining lever.

Once any reduction in the flow of oil has a serious impact on an industrialized country, the damage done is greater than in the producing country. In producing areas, income levels are low and there is no dependence on industry. Foreign exchange can be dispensed with for a few months more easily than customers can do without oil.

In addition, the potential bar-

gaining power of the Arab oil producers within the sterling area cannot be overlooked. About a quarter of the sterling area's reserves are owned by Kuwait, with another large proportion owned by the other Persian Gulf producers. There would be a serious impact on the pound's position if a threat was made to switch these holdings away from London.

Difficulties of this kind are, at worst, still some years away. In fact, the development of new sources of supply will postpone them further. But even the new



Because world oil supplies are more than adequate at present, Iraq's efforts to get greater concessions from the Iraq Petroleum Co. seem likely to fail. However, as demand catches up with supply, Middle Eastern governments will have a stronger hand in their negotiations with the oil companies.

This is a lightweight USS "T-1" Steel spiral case used in a hydroelectric power plant.

It looks like a giant sea shell. Water gushes through it under tremendous pressure to drive a water turbine that produces electrical power. Thirty-one spiral cases have recently been built of USS "T-1"

Steel for such famous power projects as Niagara, New York; Oahe Dam, South Dakota; Brownlee, Idaho; Noxon Rapids, Washington; and Swift, Washington. USS "T-1"

Constructional Alloy Steel is three times as strong as structural carbon steel.

Its great strength permitted almost 50% reduction in plate thicknesses and weight. Less weight means less freight. Welding costs are reduced . . . and expensive stress relieving after welding is eliminated.

If you are building rugged equipment of any kind, find out how USS "T-1" Steel can make your product stronger, lighter and more durable.

Write to United States Steel, 525 William Penn Place, Pittsburgh 30, Penna. USS and "T-1"

are registered trademarks. United

States Steel Corporation • Columbia-

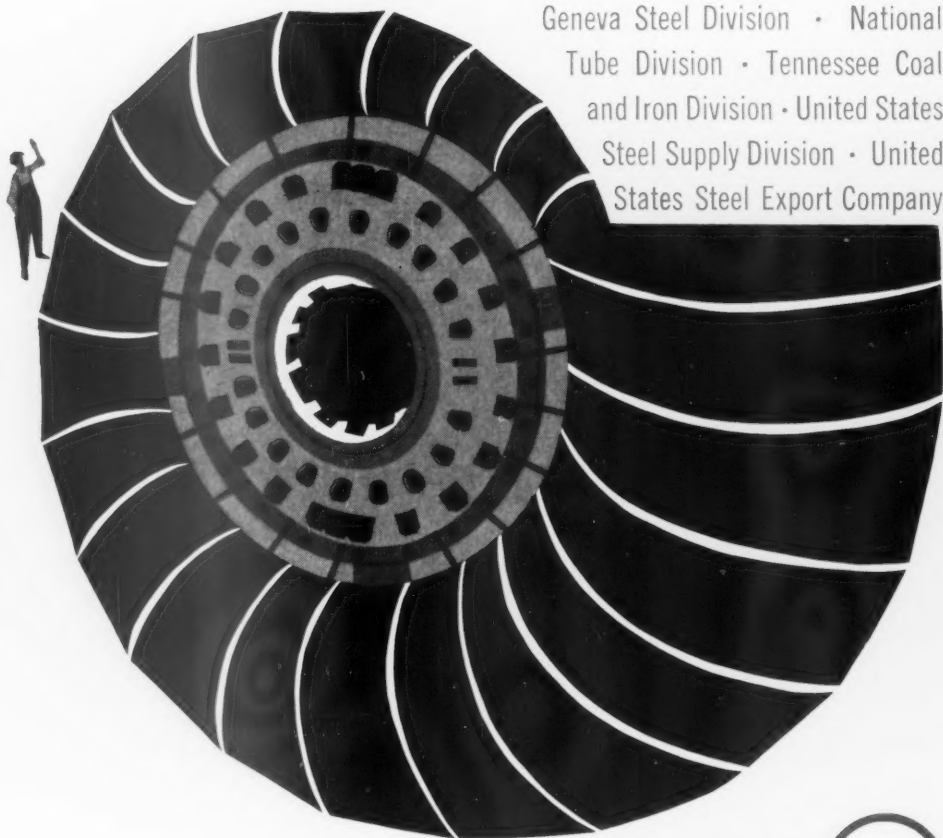
Geneva Steel Division • National

Tube Division • Tennessee Coal

and Iron Division • United States

Steel Supply Division • United

States Steel Export Company



This mark tells you a product is made of modern, dependable Steel.

United States Steel



PURCHASING

supplies are not free of political risk, as is shown by French experience in the Sahara. The new-found oil may also not be of the most suitable composition to match the pattern of developing demand—again a point that emerges from events in the Sahara.

One development that could bring the day of reckoning in oil closer is the cutback of Soviet supplies to the outside world. In the last two or three years, Russian oil has had a dislocating effect by adding to supplies in a time of surplus and undermining the price structure.

Soviet domestic demand for oil, however, is also rising rapidly. Russian long-range development programs apparently leave no room for substantial oil exports.

Thus the disappearance of Soviet oil from world markets could bring more trouble. There is no single move which would increase the bargaining power of Middle Eastern producers more sharply than the reduction of Russian oil supplies on the world market.

● Intl. Tension No Longer Governs Material Prices

International politics seem to have lost most of their former power to influence raw material prices. While the growing tension has cast a pall over stock market prices—both in the United States and Europe—the Berlin and Laos situations have not led to any panic price increases for commodities.

This is a far cry from the position in the period immediately after the outbreak of the Korean war. At that time, a scramble for almost every conceivable material pushed prices to all-time peaks.

There are, of course, several differences between circumstances in 1950 and today. Eleven years ago, the initial post-war recovery boom was still well under way in many countries. With manufactured goods in more lavish supply, the terms on which they could be

exchanged for raw materials were in favor of the primary producers.

Then again, the Korean war sparked off major rearmament programs in America and Western Europe. An important aspect of these programs was the accumulation of strategic reserves of many materials which had not previously existed on any scale. With the strong demand for metals and rubber superimposed on rising industrial requirements, it is not surprising that prices reached record levels.

Today the pace of industrial expansion throughout the world is much slower. Increasing political tension still leads to military precautions, but these are not now expressed through a massive increase in armament production. By and large, the countries of the West feel that their equipment is generally adequate. Thus far from causing a rush for stockpiles of primary commodities, the latest period of tension finds the accumulations of the Korean period still overhanging the raw material markets in some cases.

Manufacturers, who regarded the Korean war as a peripheral conflict not very likely to develop into something much bigger, generally look on the current crisis in a more serious light. The consequences of this are that instead of carrying on with expansion and preparing to pay more for materials if necessary—as was done in 1950-51—industrialists are generally being more cautious. However, if we are facing a major conflagration, there will be little benefit from policies of caution in investment and stockpiling.

Economic Forces Prevail

It looks as if economic forces still predominantly prevail in setting raw material price levels. This removes at least one further headache from industry at a difficult time.

If a successful relaxation of immediate tension does develop, it will probably trigger off a larger demand for industrial materials. Naturally, this situation would be preferable to the ruinous collapse of material prices which followed the end of the Korean crisis.

New Products From Europe

Here are a few of the more recent developments in European industry:

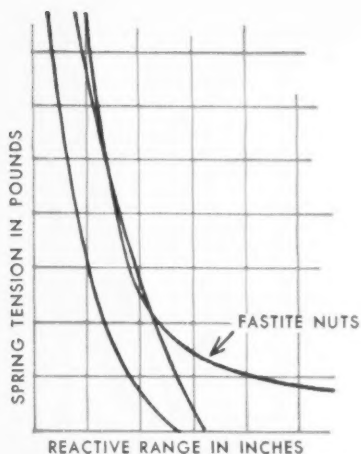
Corrosion-Resistant Containers—Tough sacks and bags, which are also resistant to chemicals, are being produced by Montecatini Società Generale per l'Industria Mineraria e Chimica (18 Via Filippo Turati, Milan, Italy). They are woven from a light-weight organic polymer material which is highly tear-resistant.

Packaged Power Stations—A "packaged" three megawatt power station can be transported by road or rail and used either as a mobile or stationary unit. The station, made by Bristol Siddeley Engines (Ansty, Coventry, England), includes a gas turbine generator and controls. It weighs 30 tons, can be incorporated into electricity supply systems for meeting peak demands, and can be fitted with fuel systems suitable for kerosene, diesel oil, or natural gas.

new

EATON-RELIANCE

FASTITE NUTS



Here is the answer to the growing need by designers and production men for more efficient fasteners on bolted assemblies. The Fastite assembly is a combination nut and helical spring washer, permanently held together, but free to rotate when pressure is applied.

Although it can be applied with equal or better speed than similar fasteners, the biggest advantage of the Fastite nut is the incorporation of the helical spring washer which provides a much greater reactive range and tension than other types of washers now being used.

Of three fasteners tested, the comparative release curve analysis showed the Fastite nut exerted 100 pounds more reactive spring tension when tight than either of the other two fasteners. More interesting, however, from the viewpoint of assembly problems is that the other fasteners lost all reactive spring tension when backed off to .016 inches whereas the Fastite nut still registered 150 pounds. In fact, the Fastite nut still showed reactive tension at .070 inches. The comparative curves are shown at left. A detailed graph of these curves is available for your inspection in the Engineering Bulletin offered below.

Translated into terms of product quality, this simply means the Eaton-Reliance Fastite nut is the best fastener available to reduce the incidence of failure in bolted components due to the ever present problems of bolt stretch and thread wear. Specify Eaton-Reliance Fastite nuts on your next order.



Send for Fastite Nuts Engineering Bulletin, no obligation.



EATON

— RELIANCE DIVISION —
MANUFACTURING COMPANY
 513 CHARLES AVENUE • MASSILLON, OHIO

SALES OFFICES: New York • Cleveland • Detroit • Chicago • St. Louis • San Francisco • Los Angeles

For More Facts Write No. 170 on Information Card—Last Page

Purchasing Follow-up

Government P.A.'s Can Use V.A. Too: Miles

Every purchasing agent — whether he works for industry, municipal, state, or federal governments—has “the serious responsibility of getting the best value for every dollar spent, whether it is the taxpayer's or the shareowner's,” says L. D. “Larry” Miles, manager of the value services section at General Electric Company.

Miles, known in purchasing circles as “the father of value analysis,” told the annual meeting of the National Association of State Purchasing Officials, meeting at Sequoyah State Park, Wagoner, Okla., that “The double threat of foreign competition and increased taxation



GE's Larry Miles: “The double threat of foreign competition and increased taxation makes more aggressive use of value analysis critically important to both industry and government.”

makes more aggressive use of value analysis critically important to both industry and government.”

According to Miles, “Private industry has no corner on the value analysis system. All institutions who buy in the market and render services to the public must train their people to utilize it in the national interest.”

Miles cited examples in his

address of savings that have been made in purchasing organizations through value analysis. In one case, he said, the purchase price of simple parts was reduced from 90 cents to 40 cents, while in another the cost of large assemblies was cut from \$3000 to \$1800.

He added that the value analysis techniques will be of great assistance in helping state officials buy products of higher value at less cost from American manufacturers.

Western Electric P.A.'s Back New SBA Program

Western Electric Company purchasing agents have pledged their support to a joint government-industry program designed to increase the flow of subcontracts to small business.

At the company's annual conference of P.A.'s held recently at Columbus, Ohio, Irving Maness, deputy administrator for procurement and technical assistance of the Small Business Administration, was a guest speaker. He was invited to explain the program by Hardy Ross, Western Electric's vice president for purchasing and traffic.

Maness outlined the steps that have been taken by SBA to increase subcontracting and described the services his agency makes available to large firms for locating qualified small suppliers. He pointed up the importance to America's defense strength of using the productive capacity of small firms.

The SBA official said later that “This pledge for support from one of the nation's large contracting organizations is most heartening. We hope that other large manufacturing concerns will join with us in the important task of spreading large prime contracts among the many smaller firms who are qualified and eager to perform subcontracting.”

N.A.P.A. Sponsors Ph.D. Internship Programs

Two new educational programs have been announced by the National Association of Purchasing Agents.

The first program establishes doctoral fellowships worth up to \$5000 for students interested in pursuing graduate study in purchasing, materials management, management's procurement obligation, and related fields. The awards cover the 1962-63 academic year, but a candidate holding a fellowship may be granted another award for the subsequent year if the N.A.P.A.'s Doctoral Research Grant Committee believes he is worthy of it.

Conditions of eligibility include U. S. citizenship, completion of at least two full years of graduate study by the time the fellowship becomes effective, and demonstration of superior analytical ability and competence in written and oral expression. Completed applications for the fellowship must reach the N.A.P.A. prior to February 1, 1962.

Helping Purchasing Teachers

The second program is for faculty internships in leading American industries for teachers of purchasing and related subjects during the summer of 1962. Objectives are to familiarize teachers in the purchasing field with current developments and practices in purchasing for industry.

The internship will be in the form of a fellowship payable by N.A.P.A. to the recipient. Compensation will be commensurate with his faculty rate of pay. Application forms must be submitted to the N.A.P.A. office prior to January 1, 1962.

Complete information about both programs is available from Marshall Edwards, N.A.P.A. administrative assistant, 11 Park Place, New York 7, N. Y.

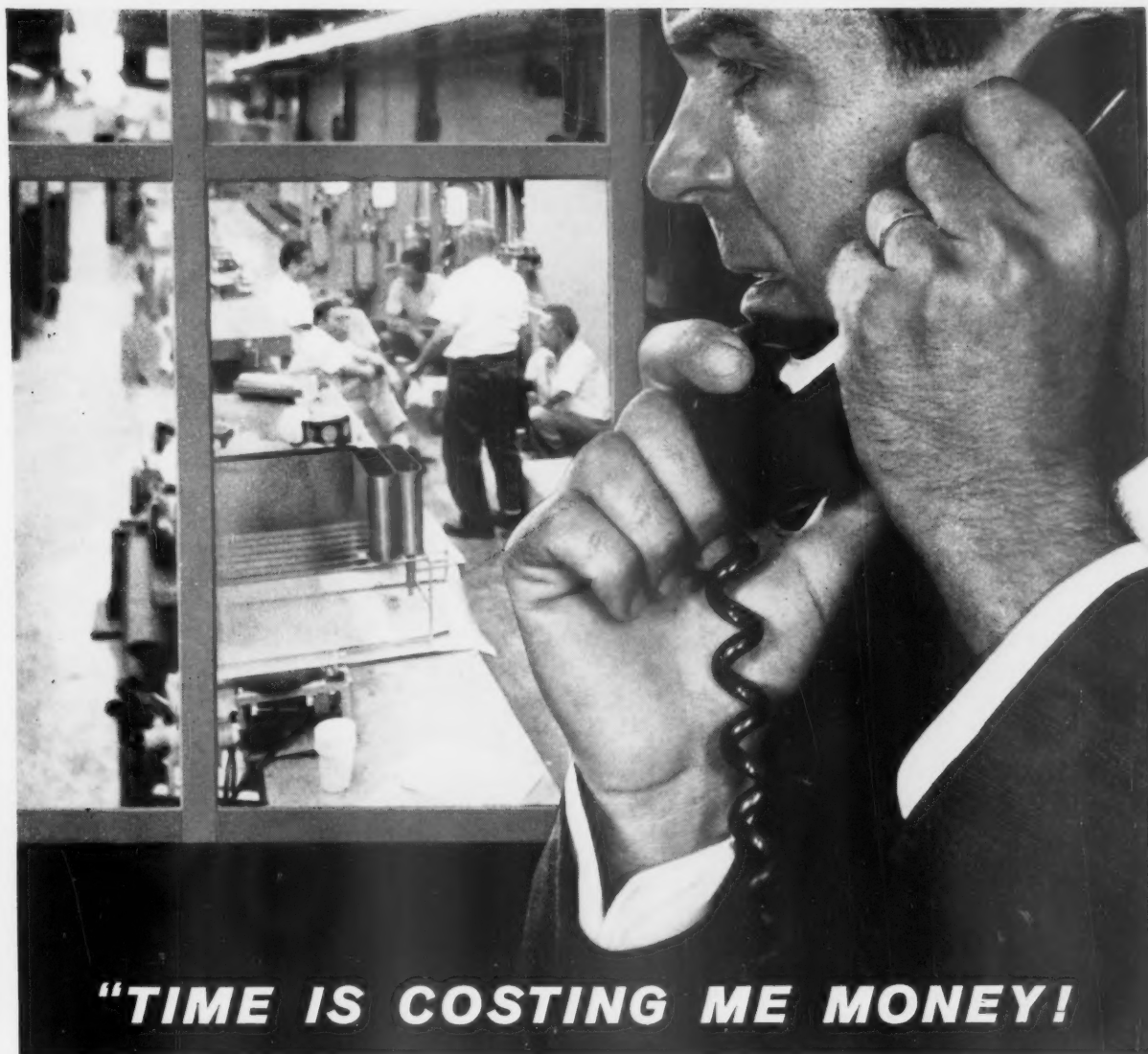
if she takes pride
in her home—
give her a kitchen
of stainless steel

**McLOUTH
STAINLESS
STEEL**—the spotless
metal for homes and
home products.

*McLouth Steel Corporation
Detroit 17, Michigan*



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"TIME IS COSTING ME MONEY!

SEND IT UNITED AIR FREIGHT!"

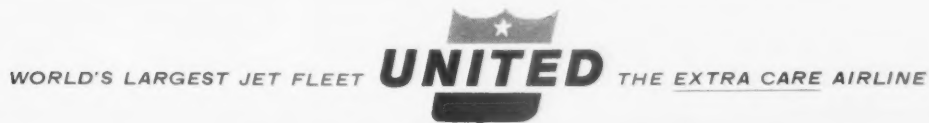
If your cargo is a tiny but vital piece of machinery, a perishable item, or heavy equipment . . . whenever you can't afford delay . . . call United Air Freight Specialists. United will speed your shipment to its destination with fast, one-carrier dependability.

Only on United do you get the advantage of the world's largest jet fleet . . . and your cargo can be carried on every flight. In addition a fleet of Mainliners® and Cargoliners stands

ready around the clock to fill your fast transport needs to more cities in the U. S., including Hawaii, than any other airline.

And on United each job receives the price-less extra of Extra Care every inch of the way . . . from door to door. By taking advantage of United's Reserved Air Freight you can ship by any specific flight you choose.

When time means money to you . . . don't delay. Call United Air Freight.



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You Get **MORE THAN A MOTOR** with
General Electric's Form G... for example...

The Right Motor Delivered on Time

A delivery schedule is a promise made—one to be kept. And we're proud of General Electric's Form G motor record on that score.

A total of five highly automated manufacturing lines in three separate plants stand ready to make sure you get the exact fhp motors you ordered... and get them when you want them.

In other areas, besides on-time delivery, Form G motor purchases help you get **MORE THAN A MOTOR** benefits. For instance:

Your manufacturing—Assembly operations can be simplified and time required reduced. It takes just a few minutes to mount a Form G motor on your product, only seconds to make electrical connections.

Your designers—Form G motors are versatile. Mount them at any angle, direct or belt drive—whatever your

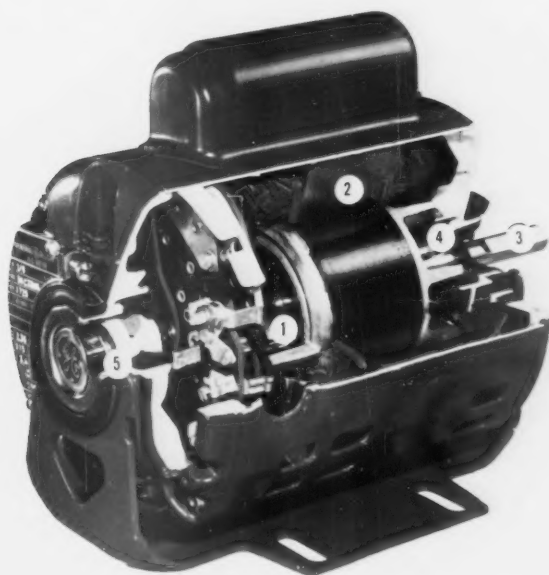
THESE YEARS-AHEAD FORM G MOTOR FEATURES MEAN LONG LIFE, RELIABLE PERFORMANCE

1. RELIABLE SWITCH—Centrifugally-operated switch has been life-tested to last for more than 3,500,000 operations. Dependable switch mechanism operates with positive snap action.

2. LONG-LIFE STATOR—heavy-duty stator bonding dip and Mylar* insulation protect against damage caused by heat, stress, moisture. Stator clamps provide additional rigidity.

3. RUST-RESISTANT SHAFT—special gunmetal-like treatment of motor shaft resists rust and corrosion, simplifies product service. Fans, pulleys, and couplings are easy to remove.

4. LONG-LIFE LUBRICATION—over 50% more oil than in old-design motors and an efficient oil retention system contribute to motor's doubled lubrication life; cut maintenance.



5. THRUST PROTECTION—Interlocking washer assembly withstands normal thrust from any direction, regardless of motor angle. The assembly also acts as an oil seal for long motor life.

6. COMPLETE LINE—Over 850 basic models—and literally thousands of variations—mean there's a standard General Electric Form G motor to meet your product's exact requirements.

* Registered trade-mark of Du Pont Co.

product requires. General Electric engineers are always available to help solve unusual motor applications.

Your salesmen—Form G's years-ahead design makes any product easier to sell. Both your salesmen and your customers know that G-E Form G motors are built for long life and reliable performance.

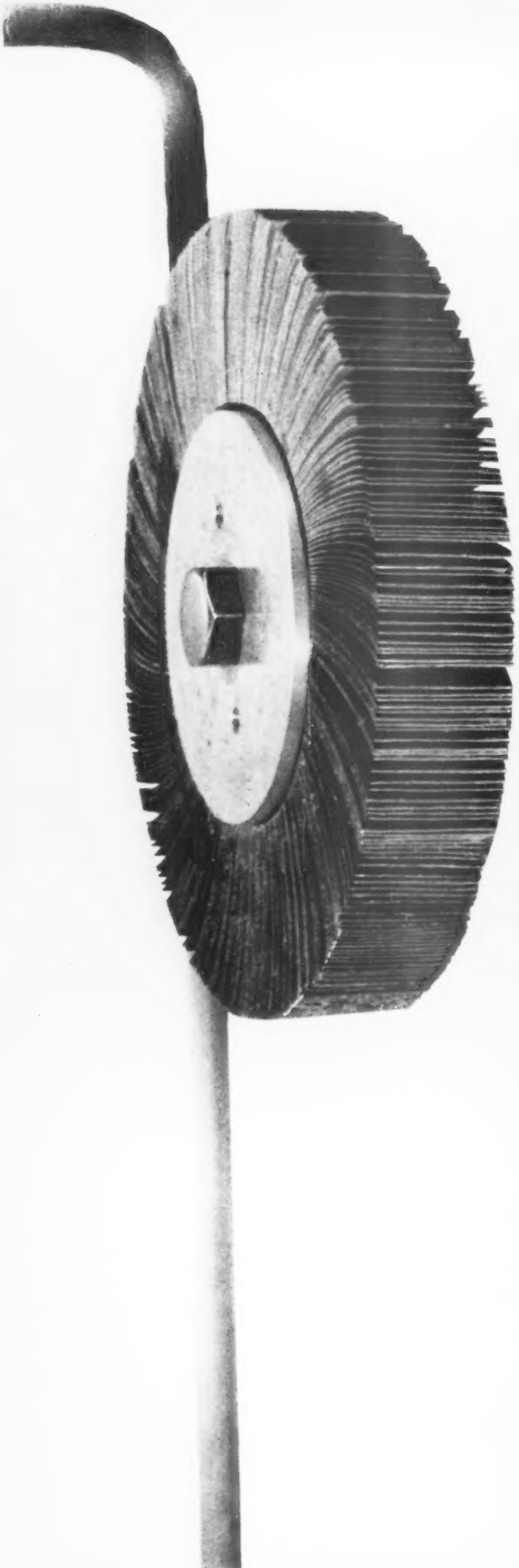
Your product service—Your customers can get fast, local service from a nationwide network of G-E Electric Motor Service Stations.

You get these *added values* at no extra cost. So why settle for less?

Form G fhp motors are available in NEMA 48 and 56 frames. For more information, call your G-E Sales Engineer or write for a copy of GEA-6424 to Section 721-05, General Electric Co., Schenectady 5, N. Y. Also ask for a copy of GED-3877 "Productive Purchasing," which describes a new concept on how to get more from your purchasing dollars.

Progress Is Our Most Important Product

GENERAL  ELECTRIC



3MAGINATION
in GRINDING
and FINISHING

ARE YOU BUYING PRICE OR PERFORMANCE ?

It's a fact, the real cost of an item is measured not in price, but in performance. This is particularly true in the purchase of coated abrasives, where new abrasive forms and quality improvements are regularly achieving cost savings through increased production.

Recognizing this need for measuring abrasive costs in terms of production output, 3M has initiated a unique service program, "COST CHECK 5-4-5". This program is designed to let you examine your production operations in the light of the newest developments in coated abrasives. For only by keeping continually informed can you be assured that you are benefiting from the most efficient grinding and finishing methods.

For example, one manufacturer by utilizing the "PG" Wheel, a recent abrasive development from 3M, cut his finishing time on stainless steel sink frames by 50%! Perhaps similar savings can be effected in your plant. Ask your 3M Representative for more information, or for a free "COST CHECK 5-4-5" Review Form, write: 3M Company, 900 Bush Ave., St. Paul 6, Minn.

3M COATED ABRASIVES

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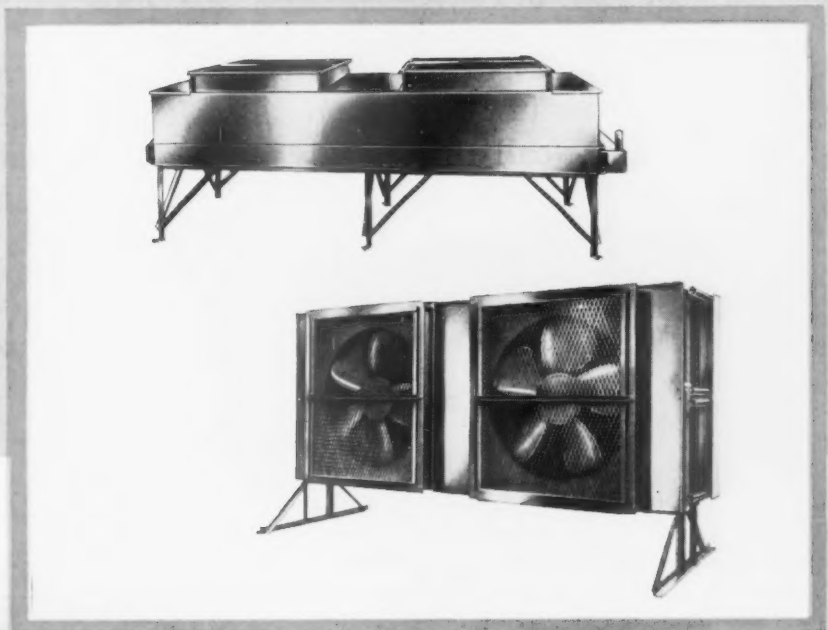
MINNESOTA MINING AND MANUFACTURING COMPANY
... WHERE RESEARCH IS THE KEY TO TOMORROW



For More Facts Write No. 174 on Information Card—Last Page

48-year-old Kramer Trenton specifies tubing by **WOLVERINE**

KRAMER UNICON



An acknowledged leader in the manufacturing of air-cooled condensing equipment is Kramer Trenton Co., of Trenton, New Jersey.

A prime example of Kramer design is its Unicon model, illustrated above, which, in its largest series, is said by Kramer to have 50% more capacity than any similar unit.

The Kramer Trenton Unicon uses Wolverine seamless copper and aluminum tubing in condensing coils and suction and liquid lines.

Kramer Trenton, now observing its 48th year of heat transfer achievement, specifies Wolverine seamless tube because they know that Wolverine's years of experience and Tubemanship assure them of tubing specifically engineered to meet the needs of refrigeration and air conditioning equipment manufacturers.

Next time you order seamless copper, copper alloy and aluminum tube—specify Wolverine. Like Kramer Trenton, and other leading American manufacturers, you'll be getting the high quality that comes only from years of experience in the manufacture, fabrication and application of tubing. Write, now, for your copy of Wolverine's Tubemanship Catalog.

WOLVERINE TUBE
DIVISION OF
Calumet & Hecla, Inc.
DEPT. 5, 17250 SOUTHFIELD RD., ALLEN PARK, MICH.
TUBEMANSHIP in Copper—Copper Alloys—Aluminum—Special Metals

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA
SALES OFFICES IN PRINCIPAL CITIES

J-9744



For More Facts Write No. 175 on Information Card—Last Page

General Electric Makes Eddy-current-coupling Drives

And they're dependable drives. The complete line includes water-cooled and air-cooled eddy-current couplings. We call them ***KINATROL**** drives. Ratings are from 1 to 150 horsepower, operating from standard a-c power.

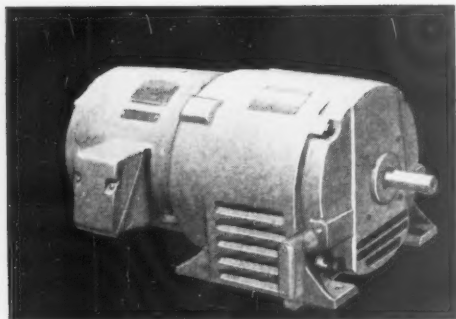
A General Electric ***KINATROL*** drive is not just another eddy-current coupling. For instance, in the water-cooled coupling, water control is packaged. You'll see much less external piping. Furthermore, the coupling is protected from flooding—and the air gaps are dry, preventing corrosion.

KINATROL couplings are compact, field proven and dependable. General Electric has had a good deal of experience in the engineering, manufacturing, and application of packaged adjustable-speed drives. And we know how important service is to a customer.

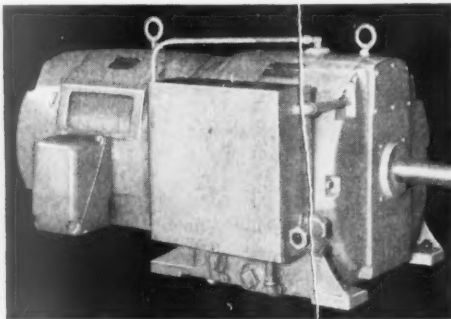
KINATROL —a good product, with the kind of service you can depend on. Please call your nearest General Electric Sales Office for further details.

*Trademark of General Electric Company

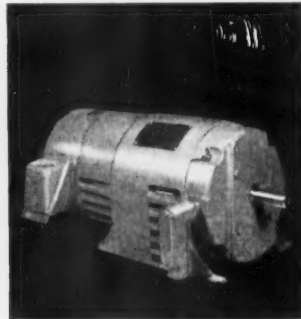
821-07



AIR COOLED, 7-1/2 to 100 HP



WATER COOLED, 25 to 150 HP



AIR COOLED, 1 to 5 HP

DIRECT CURRENT MOTOR AND GENERATOR DEPARTMENT

GENERAL  ELECTRIC

ERIE, PENNSYLVANIA



A Tinnerman T-Marked Original...

Studebaker Lark assembled faster, at lower cost with **SPEED NUTS®**

The rear fenders of the new Studebaker Lark are secured in a vibration-proof, watertight seal with this special heavy gauge Tinnerman J-type **SPEED NUT** brand fastener. It eliminates rubber stripping and costly spot-welded bearing plates, and allows the fenders to be easily removed for repair.

Preassembled to the Lark's rear quarter panel, the J-nuts hold themselves in place while the panel is first attached to the chassis. The fender is then positioned on the quarter panel and the acme bolts driven home.

In applications like this—where *total* fastener reliability is vital—Tinnerman **SPEED NUT** brand fasteners are your only choice. Only Tinnerman maintains *total* quality control from coil strip selection to finish coat. The Tinnerman T-mark on every fastener is your assurance of that quality.

For samples, literature, prices, call your Tinnerman sales office ... listed in the "Yellow Pages" under "Fasteners." Or write to: Tinnerman Products, Inc., Dept. 12, Box 6688, Cleveland 1, Ohio.

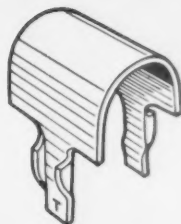


TINNERMAN

Speed Nuts®

Look for the Tinnerman "T"

T-MARK ENGINEERED SPECIALS



TUBE CLIP is designed for fastening refrigerant tubes to liners. A split rubber cushion insert is placed over the tube, and the entire unit is snapped into a rectangular mounting hole. Spring tension locks the legs in a strong, vibration-proof assembly. Has many application possibilities where tube, cable or wire must be secured.



PRINTED CIRCUIT NUT provides positive contact between printed circuit panels and connecting wires. This highly-conductive, phosphor bronze fastener snaps firmly over terminal area, allows wiring connections to be made at any station on the assembly line. A screw through the eyelet wire completes the assembly. Easy to assemble ... easy to service.



RUBBER STRIP FASTENER locks bumper strips on a famous-name vacuum cleaner, can solve rubber-strip fastening problems in many fields. This **SPEED NUT** brand fastener is simply pushed over one end of the bumper strip. Triple-tooth prong secures strip firmly while bumper is wrapped around cleaner base and anchored with identical fastener. No special tools required.

CANADA: Dominion Fasteners Ltd., Hamilton, Ontario.
GREAT BRITAIN: Simmonds Aerocessories Ltd., Tro-forest, Wales. FRANCE: Simmonds S.A., 3 rue Salomon de Rothschild, Suresnes (Seine). GERMANY: Mecano Simmonds GMBH, Heidelberg.

For More Facts Write No. 177 on Information Card—Last Page



New Gulf process makes Gulf Harmony® **GULF MAKES THINGS**

You're looking at a new catalyst (the tiny pellets). It's the heart of Gulf's new hydrogen treating process, called Gulfinishing, used to super-finish Gulf Harmony Oil. It replaces the conventional clay treating operations previously needed to finish base stocks for this product. It makes Gulf Harmony a superior, versatile oil capable of handling a number of plant lube and hydraulic assignments. Here's how.

Gulfinishing removes more undesirable compounds than any other finishing process. It not only scrubs a base stock clean, it converts weak molecules to stable ones. It greatly improves the response of the base oil to the oxidation inhibitor. This improved response means greater stability; better protection against sludge formation; longer service life.

Improved Gulf Harmony continues to provide the



a superior oil for plant equipment . . . **RUN BETTER!**

effective protection against rusting and foaming for which it has always been recognized.

Wouldn't you like to learn more about improved Gulf Harmony? Find out what it can do for your plant equipment and prove to yourself that Gulf makes things run better! Consult the Gulf catalog in Sweet's Plant Engineering file for the address of your nearest Gulf office. Or write for free brochure.

GULF OIL CORPORATION

Dept. DM, Gulf Building
Houston 2, Texas



For More Facts Write No. 178 on Information Card—Last Page

Information For Your Catalog Files

BEARINGS

Bulletin No. 7104 covers all sizes and styles of Life-Lube permanently lubricated, ball bearing pillow blocks, flange units, and take-up units. Includes a page of babbitted bearing information on load ratings and maximum shaft speeds. The two-page catalog also describes porous-bronze and babbitted pillow blocks.

T. B. Wood's Sons Co.

Write No. 1 on Information Card—Last Page

CONDENSERS

Bulletin No. 351 discusses single bank, balanced flow surface condensers. The four-page, two-color catalog has technical data and illustrations. Covers materials, operating specifications, and applications.

American-Standard

Write No. 2 on Information Card—Last Page

COPPER CONDUCTORS

A booklet containing engineering data on single strand copper conductors electroplated with coatings of pure nickel. Provides electrical and physical information on ranges of wires with five different standard plating thicknesses.

Hudson Wire Company

Write No. 3 on Information Card—Last Page

FOOTSWITCHES

Catalog No. 62 covers a line of power footswitches. Describes light and heavy duty types. Includes models in casings of cast iron, cast aluminum, formed steel, and durable phenolic.

Linemaster Switch Corporation

Write No. 4 on Information Card—Last Page

FORK LIFT TRUCKS

Bulletin 1405 covers 2000-pound capacity, short-coupled, electric-powered fork lift trucks. Describes structural and operational features, control and component details, and height and lift specifications. Graphically illustrated with application, product, and component photos.

Baker Industrial Trucks

Write No. 5 on Information Card—Last Page

GASKETS

Bulletin PK-152A provides information on metallic gaskets. The 28-page booklet is divided into six basic sections, which are fully illustrated with photographs and cross-sections. Includes three comprehensive charts and tables giving standard size data.

Johns-Manville

Write No. 6 on Information Card—Last Page

GLOVES

An illustrated, eight-page bulletin giving data on gloves for industrial hand protection. Describes 69 different types of gloves, hand pads, mitts, and sleeves. Illustrates a large variety of styles for light, medium, and heavy requirements.

Keller Glove Mfg. Co.

Write No. 7 on Information Card—Last Page

INDUSTRIAL GASES

A 48-page, pocket-size booklet providing industrial gas data. Form ADE-890 lists physical and chemical properties of oxygen, nitrogen, argon, helium, hydrogen, carbon dioxide, acetylene, neon, krypton, and xenon. Illustrated with charts and diagrams.

Air Reduction Sales Company

Write No. 8 on Information Card—Last Page

INVESTMENT CASTINGS

A pocket folder of facts about investment castings. The two-color flyer describes and illustrates major advantages of the lost wax process. Includes tables for determining general tolerances, flatness, straightness, and concentricity.

Hitchiner Manufacturing Co.

Write No. 9 on Information Card—Last Page

LABELS

A four-page brochure giving application ideas for pressure sensitive labels. The illustrated booklet shows and describes five basic types. Gives data on shapes, sizes, paper stocks, and label dispensers.

National Tag Co.

Write No. 10 on Information Card—Last Page

MOTORS

GEA-7332 describes features and advantages of synchronous reluctance motors—rated one to five horsepower, 220-440 volts, three phase, and 60 cycles. The two-page illustrated publication contains a consolidated rating and performance chart with dimension diagrams. A cutaway photo shows the internal components.

General Electric Company

Write No. 11 on Information Card—Last Page

POWER SUPPLIES

A 44-page catalog describing both standard and custom engineered power supplies, ranging in size from 50 watts to 5000 kilowatts. A two-color bulletin lists over 3000 models. Includes a glossary and an electroplating guide.

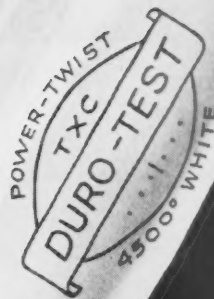
American Rectifier Corporation

Write No. 12 on Information Card—Last Page

Power-Twist™

brightest
fluorescent
light bulb
in the world!

fits all
existing
fixtures



New! The spiral configuration of POWER-TWIST produces the longest and most powerful arc stream...creating the greatest excitation of phosphors ever achieved inside any fluorescent light bulb. This new Duro-Test design gives you the world's brightest fluorescent light bulb, *plus* long light life, unconditionally guaranteed for two full years.



For full details and literature, write Dept. E8

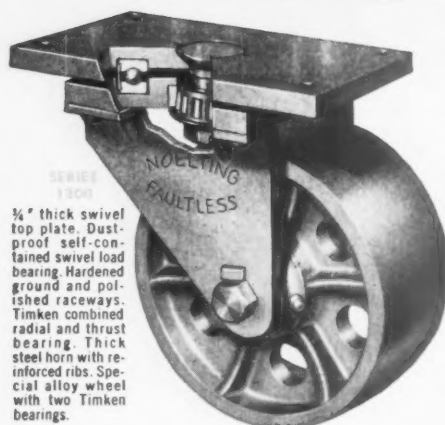
DURO-TEST CORPORATION

North Bergen, N. J. Branches: Atlanta • Chicago • Houston
San Francisco • San Juan, Puerto Rico • Toronto, Ontario

Design, shape, chemical formulae, and mechanical and manufacturing processes
Registered U.S. Patent Office and Patents Pending. ©1961, Duro-Test Corporation.



Dreadnaught Casters move loads up to



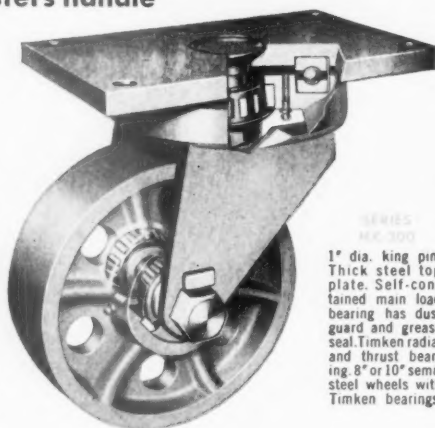
**7½ Tons
PER CASTER**

When it comes to **CASTER STRENGTH** for rolling the big loads along your assembly line, or around your stock pile area, Faultless engineered casters can give a lift to your big production and warehousing problems. Above, a Faultless Series 1300 Swivel Plate Caster and two Faultless wheels in special mountings easily handle a 22,000 lb. Caterpillar Diesel-electric engine with minimum manpower; a usual task for the Faultless Series 1300 Dreadnaught Caster.

Super strong HX300 Casters handle loads up to

**5 Tons
PER CASTER
WITH 8" WHEEL**

For surplus strength to roll under cargoes that break down or damage ordinary casters, the HX300 Series, extra heavy duty swivel caster, will fit your specifications. It's precisely engineered throughout and constructed of quality materials to provide a caster capable of easily taking on 10,000 lb. loads, while keeping production lines moving with minimum handling costs.



SERIES HX 300
1" dia. king pin. Thick steel top plate. Self-contained main load bearing has dust guard and grease seal. Timken radial and thrust bearing. 8" or 10" semi-steel wheels with Timken bearings.



ASK YOUR DISTRIBUTOR: Your nearby Faultless Industrial Distributor maintains a substantial inventory of Faultless Casters for immediate delivery. He and one of the strategically located Faultless Sales Engineers are available to work with you on every handling problem in your plant. Both are listed in the phone book Yellow Pages, under "Casters," and the Faultless heading.

Faultless Caster Corporation

Evansville 7, Indiana

Representatives in Atlanta, Baltimore, Boston, Buffalo, Chicago, Cleveland, Dallas, Detroit, Grand Rapids, Greenville, S.C., High Point, Indianapolis, Los Angeles, New Orleans, New York, Philadelphia, Portland, St. Louis, Washington, D.C., Canada: Stratford, Ontario.



For More Facts Write No. 180 on Information Card—Last Page

Catalog Files

PRESSURE HOSE

Bulletin 15-E describes interlocked pressure hose for loading, unloading, and conveying steam, oil, tar, and asphalt. The six-page brochure includes features and applications. Shows: specifications, working pressure correction factors, and typical assemblies that are available.

Atlantic Metal Hose Company, Inc.

Write No. 13 on Information Card—Last Page

PUMPS

Bulletin 861 describes a line of proportioning pumps. The 12-page catalog includes capacity and selection tables. Also covers packaged chemical feed systems.

Jaeco Pump Company

Write No. 14 on Information Card—Last Page

STAPLE NAILERS

Brochure No. FT-43 lists and describes a line of staple nailers. The four-page color folder also covers several uses. Includes application photographs of the equipment.

Fastener Corporation

Write No. 15 on Information Card—Last Page

THERMOMETERS

Catalog 09-100 covers bimetal thermometers. Includes available ranges, sizes, and types. Provides data on special applications, special windows, corrosive condition, and special walls.

Weston Instruments

Write No. 16 on Information Card—Last Page

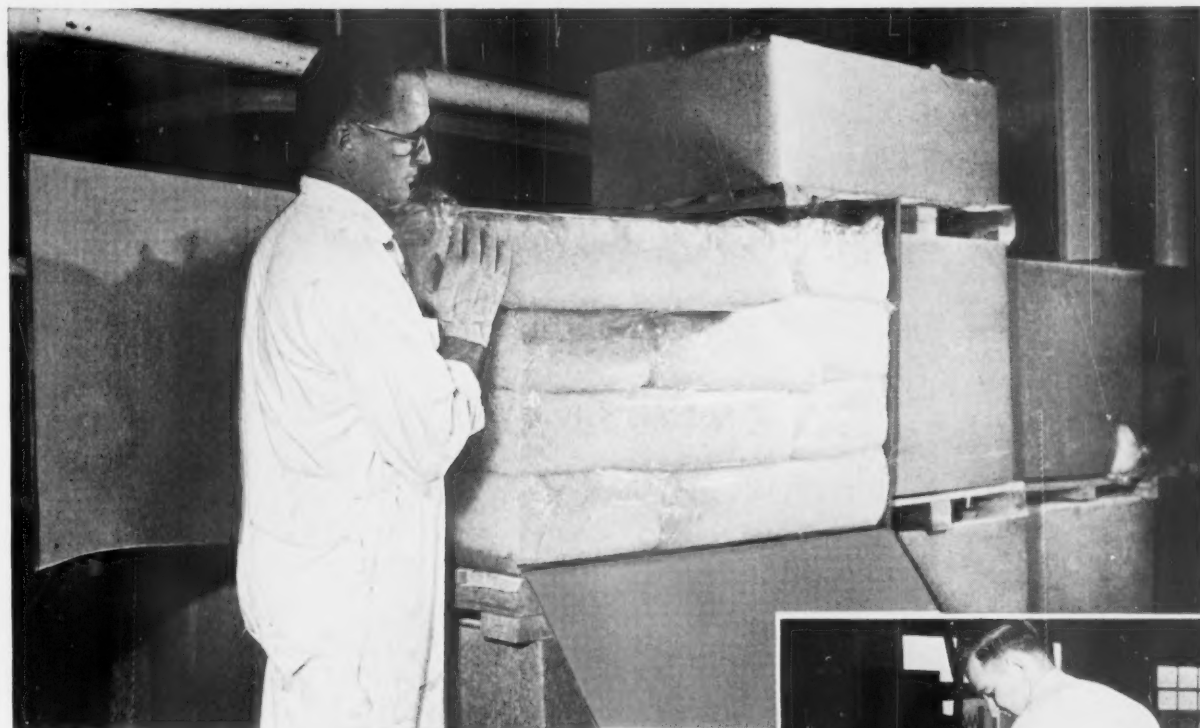
VALVES

Bulletin No. 6102 describes regular and increasing types of valves. The illustrated 24-page catalog includes a pressure rating table on the 2- to 16-inch valve sizes. Has basic facts on spring and weight assemblies.

Darling Valve & Manufacturing Co.

Write No. 17 on Information Card—Last Page

Silicones lighten the load



Prevent sticking, cut costs with Syl-off paper coatings

Syl-off® silicone coatings on paper and paperboard make it easier to unpack sticky products . . . simplify and speed handling. Even such tough stickers as raw rubber, asphalt, adhesives and plastic bases come away cleanly and quickly from all types of containers and process papers coated with Syl-off. Nonmigrating and noncontaminating, these anti-adhesive silicone coatings help processors remove all of the product . . . cutting waste to the bone . . . minimizing unloading time.

More Applications. Pressure-sensitive decals, labels, decorative trims and wallpapers peel free in a flash without tearing from Syl-off coated separators or backing papers. Use of food grade Syl-off coatings on food packaging papers is in compliance with provisions of the Food Additives Amendment of 1958.

Benefits All. Everyone who buys, ships or uses sticky products profits from Syl-off coated papers. Even your shipping costs are lower because Syl-off coatings actually weigh less than other release coatings.

For Information about properties and applications of Syl-off . . . and for a list of sources for paper products with Syl-off coatings, contact the Dow Corning office nearest you. Address Dept. 7223.



Your best source for information about silicone paper coatings, defoamers and anti-blocking agents is the Dow Corning office nearest you.



Dow Corning CORPORATION
MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D. C.

For More Facts Write No. 181 on Information Card—Last Page





ONLY J&L MAKES COLD FINISHED WIDE FLATS THAT ARE "MACHINE-SHOP PERFECT"

BECAUSE ONLY J&L COLD ROLLS FIRST,
THEN DUPLEX MILLS THE EDGES.

J&L cold finished wide flats (six inches and up) are cold rolled and leveled—*then* the edges are duplex milled. Result? Wide flats with precise and uniform tolerances from bar to bar. Edges that are perfectly square and true.

Only J&L produces tool-and-die quality, "machine-shop perfect" wide flats. Operators depend on them for stripper and bed plates, dies, jigs, fixtures and machine cams that are accurate and uniform, require less machining.

These prepared, machined flats are readily available from your local Steel Service Center in widths up to 14 $\frac{5}{8}$ " and in thicknesses from $\frac{1}{8}$ " to 2 $\frac{1}{2}$ ".

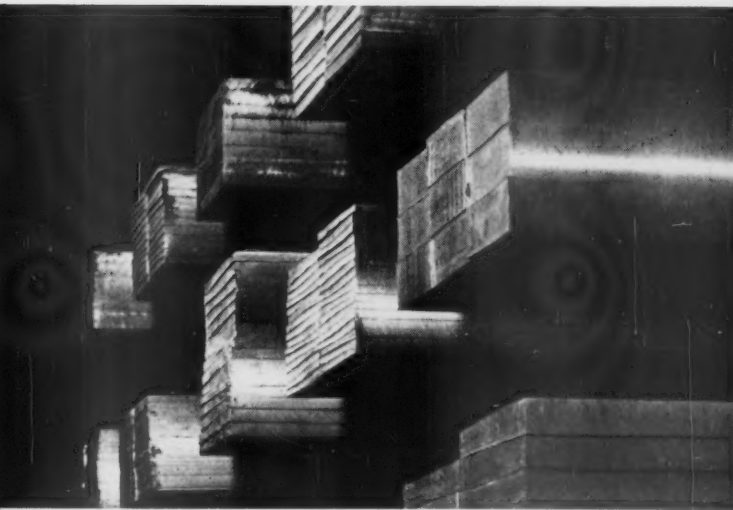


**Jones & Laughlin
Steel Corporation**

3 GATEWAY CENTER, PITTSBURGH 30, PENNSYLVANIA

Where cold finished steel bars originated in 1859

*Your Steel Service Center stocks J&L Wide
Flats as standard items for quick delivery.*



*J&L Wide Flats are duplex
milled after rolling to give
you uniformly square edges
that reduce or eliminate
further machining.*



Steel's Symbol of
strength, long life,
and economy.

For More Facts Write No. 182 on Information Card—Last Page

YOU CAN "PUT THE BITE" ON

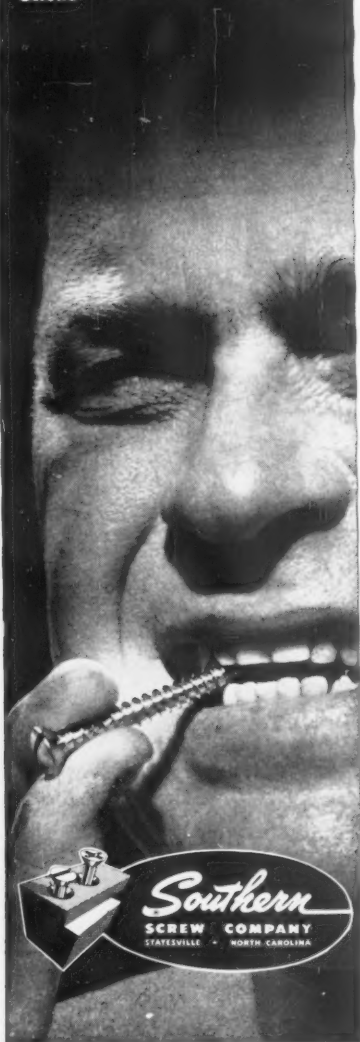
Southern

Southern fasteners would pass the old-time "bite" test for quality without a doubt. They'll stand any test for quality because they are made by USA specialists using USA materials.

You can "put the bite" on Southern for service, too. Contact your Southern distributor today, or write, wire or phone Southern Screw Company, P.O. Box 1360, Statesville, North Carolina. Phone TRIangle 3-7213.

Manufacturing and Main Stock in Statesville, North Carolina. Warehouses: New York • Chicago • Dallas • Los Angeles

Machine Screws & Nuts • Tapping Screws • Stove Bolts • Drive Screws • Carriage Bolts • Continuous Threaded Studs • Wood Screws • Hanger Bolts • Dowel Screws



Write No. 183 on Information Card—Last Page

Letters To The Editor

COLLEGE TEXT MATERIAL

Dear Sir:

The article "Value Buying at General Electric" which appeared in your May 8, 1961 issue was very well done. If possible I would like to have 20 reprints of the article to use in connection with a course at the Amos Tuck School of Business Administration.

James Brian Quinn
Dartmouth College
Hanover, New Hampshire

PASS THE WORD ON

Dear Sir:

I very much enjoyed the article entitled "How Engineers Can Help The P.A." which appeared in your April 10, 1961 issue. Please forward four copies of this article so that I may circulate them to our own engineering department.

J. W. Dunbar
Collins Radio Company
Toronto, Ontario

SAYS DROP INFORM-A-SHOW

Dear Sir:

Paul Farrell's editorial in the July 3 issue of PURCHASING Magazine struck a responsive note on the question of the N.A.P.A. Inform-A-Show. I feel he has dismissed too quickly the best alternative presented.

My reasons are as follows:

(1) There are a sufficient number of trade shows which specialize in a given commodity or function to satisfy the purchasing agent who wants more information in this format. The Inform-A-Show has no theme as such, which is one of its basic weaknesses.

When you examine the history of trade fairs, they appear to be a European invention—with the fundamental difference that even today, future business is transacted between the buyer and seller in person at the show.

(2) The ethical position of the N.A.P.A. is painfully weak in respect to the Inform-A-Show. The

purchasing agents should be able to have a meeting of their own planning, where the problems and techniques of purchasing can be discussed without being sponsored indirectly by the vendors at large.

It somehow distorts the image of the dedicated purchasing agent going off to attend a serious meeting around his specialty. His superiors classify it mentally as another junket surreptitiously sponsored by the exhibiting companies and their "hospitality suites."

Purchasing executives must take their responsibilities seriously before the authority to purchase is actually delegated to them. We cannot really be serious about our responsibilities as purchasing agents and have, at the same time, an Inform-A-Show as part of the annual N.A.P.A. convention.

W. R. Patton
International Telephone and
Telegraph Corp.
New York 22, N. Y.

LEARNING CURVE

Dear Sir:

Would you please send us reprints of the article entitled "How to Use the Learning Curve" which appeared in the July 17 issue of PURCHASING Magazine.

This article has been helpful in formulating new techniques in the area of planning and programming. We believe this idea offers an extremely good, practical approach.

R. Jennings
ACF Electronic Division
Paramus, New Jersey

GLAD TO HELP

Dear Sir:

Thanks for sending the 1960 "Index of Articles" which appeared in PURCHASING Magazine. This information is very useful for our Association files.

E. P. Emerson
New England Purchasing
Agents Assn.
Boston 10, Mass

EXIDE POWER PACKAGE

Exide Industrial Marketing Division, The Electric Storage Battery Company, Philadelphia 20, Pa.



85 AMP-HR—ONLY 22⁵/₈ in. HIGH!

Here's the new high in battery capacity for electric industrial trucks—the Exide-Ironclad TSC Battery. It is available right now and it will fit in the battery compartments of your present trucks without modification. It conforms to the design thinking for future trucks as expressed by truck manufacturers.

This battery offers a capacity of 85 amp-hr per positive plate—increased from the previous highest available capacity of 80 amp-hr in the Exide-Ironclad TGS—and still with over-all height of 22⁵/₈ in. The

length and width dimensions of the battery are also unchanged. Therefore the new battery occupies the same space as present batteries.

A unique feature of the Exide-Ironclad Battery is the tubular construction of the positive plates. With the square-shaped tube, introduced over a year ago in the TGS Battery, Exide made it possible to get higher capacity from each positive plate through greater area in contact with the electrolyte.

Now, in the TSC Battery, Exide introduces woven mesh tubing, still square shaped, but with higher porosity for easier access of electrolyte. This new tubing is able to hold more active material, which, in addition to the higher porosity, results in higher capacity than ever before. The tubing is of a special nonoxidizing material of proven long life in extensive laboratory tests and field applications.

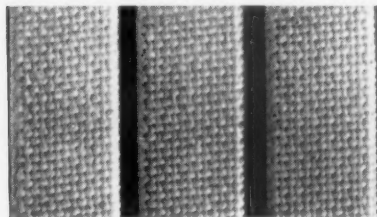
This increase in battery capacity has been achieved without increasing the height of the battery. Thus you can step up the work capacity of your present trucks without the extra expense of modifying the battery compartments. The Exide-Ironclad TSC is still only 22⁵/₈ in. high. Likewise its specific gravity is still only 1.275.

Hence battery life potential remains high.

With the introduction of the Exide-Ironclad TSC, Exide now makes it possible for you to match your particular battery power requirements more closely than ever. If you are ready to buy a new truck or new battery now, talk with your Exide representative about how you can get the maximum power for your dollar.

Only Exide offers so broad a range of battery types: Exide-Ironclad, Exide-Powerclad premium flat plate, and Exide Nickel-iron alkaline (invented by Thomas A. Edison). Exide chargers are available in both motor-generator and silicon rectifier types, in sizes to cover all needs. Exide service men are coast to coast, all factory trained in both batteries and chargers.

Make sure you get maximum economy in your battery power. Write Exide Industrial Marketing Division, The Electric Storage Battery Company, Philadelphia 20, Pa.



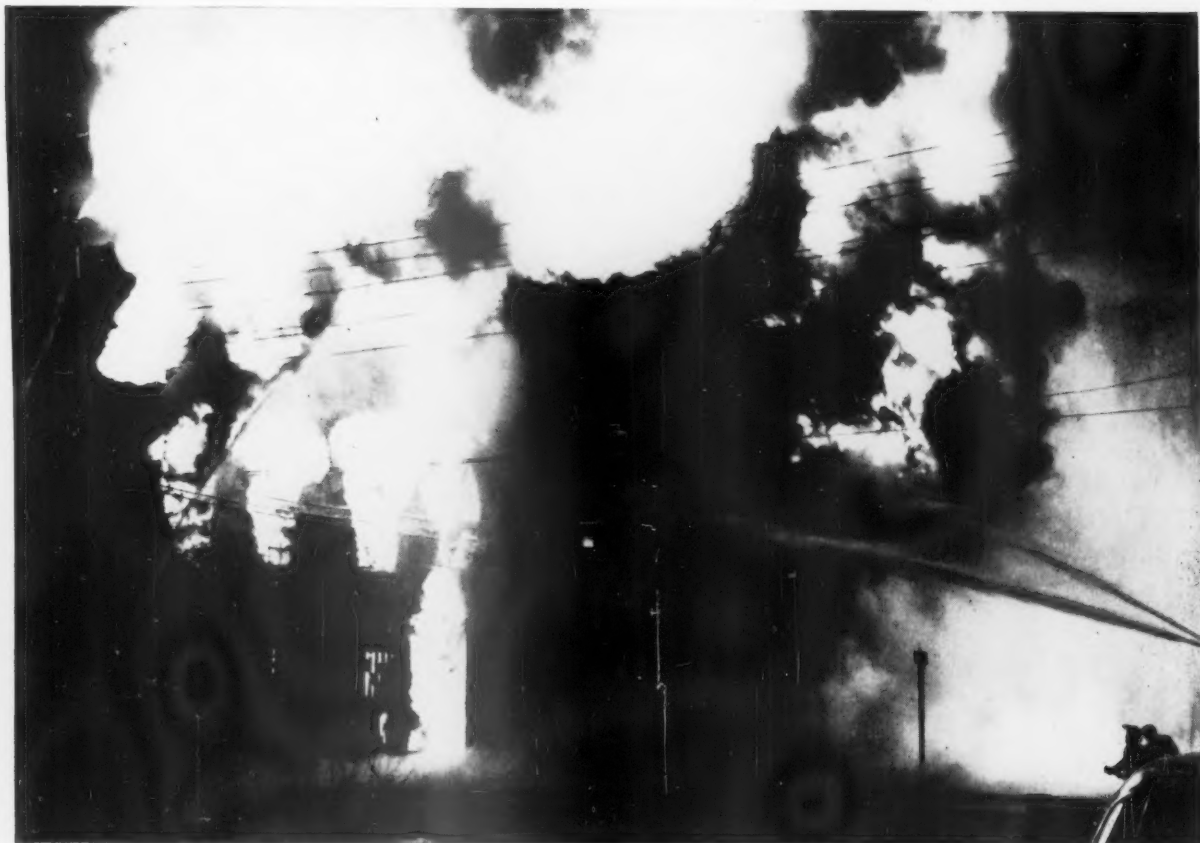
New tubing boosts battery capacity

Side view of tubing magnified twice size shows the fine mesh with thousands of pores for easy flow of electrolyte. Holds active material firmly against loss.

Exide®

For More Facts Write No. 184 on Information Card—Last Page

Gone Forever—\$1,000,000



Out of control, this four-alarm blaze completely destroyed an unsprinklered rubber warehouse. Result: a million dollar loss.

**Proof that
Grinnell
Sprinklers
can protect you
against disaster
by fire**



Grinnell Sprinklers went into action fast when fire broke out in U. S. Rubber plant. The fire was quickly checked and serious loss averted. Complete Grinnell systems are prefabricated—then

installed by expert crews. Grinnell Sprinklers save insurance dollars, too. For more information, write to Grinnell Company, Providence 1, Rhode Island. Sales Offices in principal cities.

GRINNELL

AUTOMATIC SPRINKLER FIRE PROTECTION SINCE 1878



For More Facts Write No. 185 on Information Card—Last Page

Who makes the die castings for the FABULOUS NEW IBM SELECTRIC?... MT. VERNON

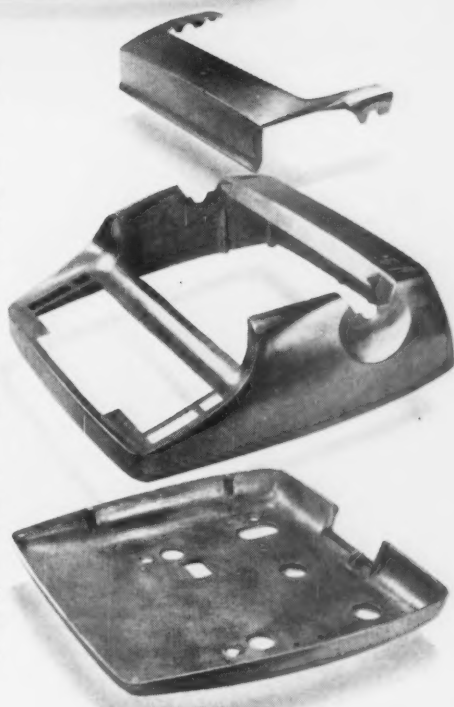


This truly revolutionary IBM SELECTRIC typewriter is probably the most important breakthrough in office technology since the invention of the typewriter itself.

It is a brilliant example of engineering, workmanship and the imaginative use of materials and processes. Contributing to the beautiful appearance — and much lighter overall weight — are the 3 Mt. Vernon aluminum die castings that comprise the housing. They weigh only 5½ lbs.

As with IBM to whom Mt. Vernon has been a reliable supplier for several years, we also offer you our fourfold services and coordinated facilities for precision zinc and aluminum die castings.

We may be the "reliable supplier" you need to help you improve your products. Why not get in touch with us and talk it over? Our field salesmen are waiting for your call.



MT. VERNON DIE CASTING CORPORATION

Stamford, Connecticut

FIELD SALESMEN—BALTIMORE, MD.: Mr. C. M. Gordan, 919 St. Paul St. • BROOKLYN, N. Y.: Mr. Robert V. Moore, 2317 Plumb 2nd St. • MARIETTA, N. Y.: Mr. Burt J. Meldrum, Olanco Road • PITTSBURGH, PA.: Mr. Andrew W. Anderson, 300 Pasadena Drive So. • STAMFORD, CONN.: Mr. Anker Anderson, Cascade Road
• VALLEY FORGE, PA.: Mr. G. T. McMaster, P. O. Box 115



Purchasing People In The News

The appointment of **Mr. Fred E. Heimann** as purchasing agent for the **Electro-Physics Laboratories of ACF Electronics**, a division of **ACF Industries, Inc.**, Hyattsville, Md., was made recently.

Mr. Heimann, who joined the purchasing department of ACF Industries in August 1960, as-



Fred E. Heimann

sumes responsibility for all purchasing and material-control functions of the laboratories.

Prior to joining ACF, he was purchasing agent for the Atlantic division of Aerojet-General Corp., Frederick, Md. During World War II he served with the U. S. Army Counter-Intelligence Corps in the European Theatre. Mr. Heimann is a native of Germany and attended Eerde College, the Netherlands.

Mr. A. W. Connar, assistant to vice-president in **Bethlehem Steel Company's** purchasing department, **Bethlehem, Pa.**, has been named general purchasing agent. A native of Zanesville, Ohio, Mr. Connar attended public schools there and was graduated from Ohio State University with a B.S. degree in Bus. Admin.

On leaving OSU, where he majored in Industrial Management, he joined Bethlehem Steel as a member of the 1937 Loop Course—management training program for college graduates. He was assigned to the purchasing department as a junior buyer, becoming

a buyer in August, 1944. He became assistant purchasing agent in September, 1950, and assistant



A. W. Connar

to vice-president in January, 1955.

Mr. Connar is a member of the American Iron & Steel Institute.

Mr. Roberts S. Demitz has been appointed director of purchasing for the **Carter Carburetor division of ACF Industries, Inc.**, St. Louis, Mo. He succeeds **Mr. D. G. Teasdale** who is retiring after 25 years of service with the company.

Mr. Demitz has held engineering and manufacturing positions in the Carter organization, which he joined in 1957 following his re-



Roberts S. Demitz

tirement from the U. S. Army as a colonel.

He is a graduate of the United States Military Academy, was

chief engineer of the transportation research and development station at Fort Eustis, Va. Prior to that he was chief of supply, procurement and logistics with U. S. forces in Berlin and at Fort Knox, Ky.

Mr. G. H. Swift, vice president of **Swift & Company**, 115 West Jackson Blvd., Chicago, Ill., has been assigned new responsibilities and will control purchasing, transportation, public relations and commercial research departments of the company. He will also assist the president.

Mr. Swift joined the company in



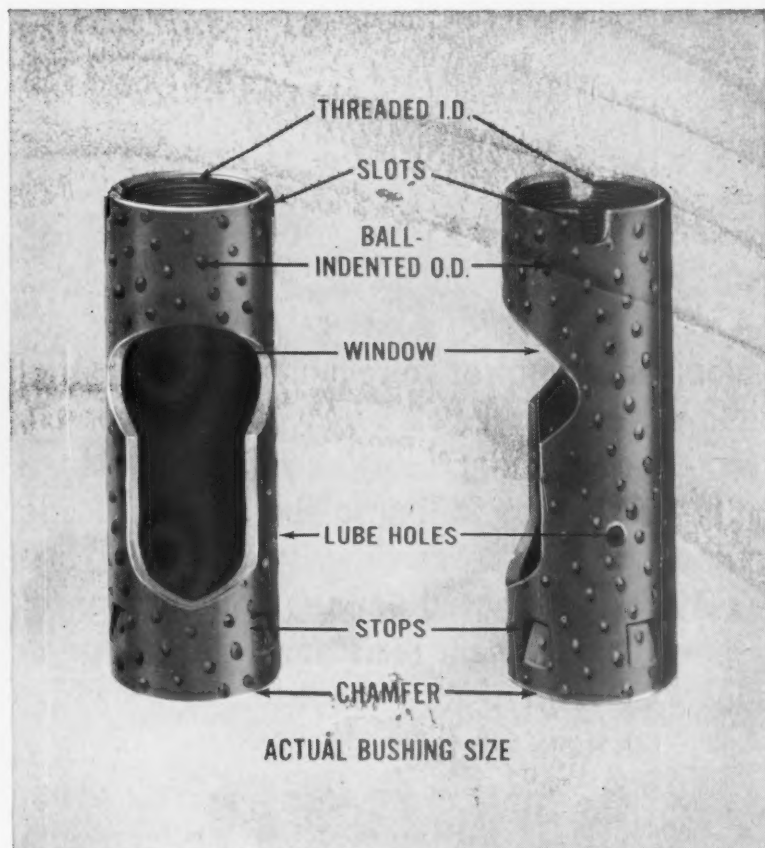
G. H. Swift

1939 at Somerville, Mass., and has a broad background of management experience in various departments of the company and in plant operation.

Vice President **R. W. Reneker**, formerly in charge of purchasing, transportation, and public relations, becomes coordinator of future planning for the company. He will continue his industrial relations responsibilities and will assist the president.

Announcement was made recently by **Stanford Engineering Company**, Salem, Illinois, of the appointment of **Mr. Donald G. Morton** as purchasing manager at the company's manufacturing plant. In his new position, Mr. Morton will manage the purchase of web control and web converting equipment applied to web-fed process applications.

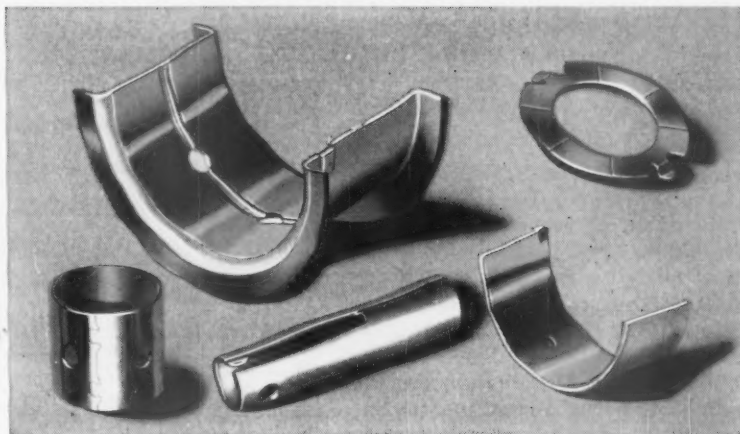
"EXOTIC" BUSHING MAKES NEW STEERING DESIGN COME TRUE



INSIDE-OUT BUSHING HELPS PUT NEW STEERING MECHANISM INTO PRODUCTION!

To perfect a new steering mechanism, an automotive manufacturer required a linkage component. Designers tried making it of machined steel, then plastic . . . both materials failed. But the unusual bushing shown at left, with a number of features F-M engineers helped designers incorporate, solved the problem. It is bronze-on-steel, formed with the ball-indented bronze on the O.D. so the bushing can accommodate sliding motion within the mechanism. A large window makes insertion of a ball socket easy during assembly. Design of the bushing also includes: stops near one end to hold a disc . . . a threaded I.D. on the other with slots for a locking pin . . . holes that supply lubricant to the outer surface. For the F-M customer, all these built-in features helped accomplish this result—easy, efficient assembly and success with a new design.

CAN F-M BUSHINGS SOLVE problems on your board or on your assembly line? Or perhaps a sleeve bearing, thrust washer or spacer? F-M, who makes them all, can provide the answer. F-M engineers, with a wealth of knowledge from years of experience, are available to help design the needed component. This complete technical assistance is one reason why these F-M products are widely specified for use in automobiles, farm equipment, construction machinery and many other products.



Additional information about bushings is provided in a Design Guide, published by F-M. Helpful literature is also available on sleeve bearings, thrust washers and spacer tubes. For your copies, write Federal-Mogul Division, Federal-Mogul-Bower Bearings, Inc., 11077 Shoemaker, Detroit 13, Michigan.

FEDERAL-MOGUL

sleeve bearings
bushings-spacers
thrust washers

DIVISION OF
FEDERAL-MOGUL-BOWER
BEARINGS, INC.

For More Facts Write No. 187 on Information Card—Last Page

Read about the most important development

A recent Cyclone Fence development promises to revolutionize industrial fencing throughout the United States. After years of vigorous research, and production line debugging, we are manufacturing an aluminum-coated steel fence of such high quality that we are willing to give it the Cyclone name. Nine years of field testing indicate that no other type of fence can economically match Cyclone Aluminum-Coated Fence's combination of corrosion resistance, tensile strength and heat resistance. Yet the price is only slightly above first-quality galvanized steel fence.

FIRE RESISTANCE

In a brush or debris fire, not uncommon along a fence line, temperatures can easily climb to the 1,300° mark. If the fence fabric melts, your property protection goes with it. The steel in Cyclone Aluminum-Coated Fence will not melt at temperatures below 2,850°. Repeated tests have shown that our aluminum-coated fabric can withstand temperatures as high as 1,650° and still retain its protective coating, and 2,000° for brief periods without the destruction of a single strand of wire.

STRENGTH

The steel wire used in Cyclone Aluminum-

Coated Fence has a minimum tensile strength of 80,000 psi, and that strength is retained as long as the coating remains intact. What does this strength mean to you? In actual tests, USS Cyclone Aluminum-Coated Fence was rammed by a car traveling at 35 mph. Not a single strand of wire was broken. ■ Buyers must not underestimate the necessity for strength in industrial fence. If you could "fence your fence" to protect it there would be no problems. But fence has to stand alone, and withstand vandals, side-swiping vehicles, and all sorts of mechanical abuse.

Protect it with  **CYCLONE**

in the history of property protection fence

CORROSION RESISTANCE **PRICE**

Our Research and Metallurgical people have found accelerated weathering and salt spray tests are misleading, therefore the following data is from actual service records: After 9 years of continuous exposure to a severe industrial atmosphere (Cleveland), Cyclone Aluminum-Coated Fence shows practically no deterioration. Even after 9 years of severe marine exposure, 90% of the surface was free of corrosion.

The normal market prices for USS Cyclone Aluminum-Coated Fence are only slightly above prices for galvanized chain link fence. And remember, for this very slight premium you're getting the combination of aluminum and steel that gives you superior corrosion resistance and long lasting strength.

KNOW THE BRAND

Cyclone is a brand name, not a type of fence. When you buy USS Cyclone you're getting a fence that's pre-engineered, prefabricated down to its smallest part. The Cyclone-developed H-Post is built like a steel beam for extra strength; Cyclone gates are sleeve-constructed—not welded—so they can be easily repaired; one-quality, full-weight fabric; deep-set post installations that don't skimp on concrete or steel, and professional installation by long-time Cyclone crewmen who know how to put up a fence to stay. ■ USS Cyclone has sales offices all over the country and a reputation built on the fact that Cyclone is the most widely used property protection fence in the world. Cyclone Fence is backed by the American Steel and Wire Division of United States Steel—a company that will be around tomorrow to live with what it sells today. ■ 69 CYCLONE BRANCH OFFICES. Cyclone has 69 branch offices throughout the country. Which means, wherever you are, we're reasonably close by. Give us a call next time you need fence around your company's property. Check your Yellow Pages under "Fence." For a brochure on new Cyclone Aluminum-Coated Fence, write American Steel and Wire, Rockefeller Building, Cleveland 13, Ohio.

USS and Cyclone are registered trademarks.



For safety, dependability, economy.



**American Steel and Wire
Division of
United States Steel**

Sees Increased Sales, Lower Profits

Its midyear report confirms **NICE** Company's prediction for the current fiscal year. Despite increased sales volume, profits have been substantially lower than expected.

Rising Costs Cut Profits, **NICE** Reports

Company's 1st half operations showed a drop in profits, according to the Company's president. Increases in the cost of several basic manufacturing items accounted for a good portion of this tapering of profits.

Reports 2nd Quarter Drop

Manufacturing reports its 2nd quarter showed a drop in net profits. A spokesman reported that this condition arose despite slight increase in sales.

**COSTS
UP?
PROFITS
DOWN?**

Try
NICE

for **Performance and Price**

Cost-conscious manufacturers will find many cost-saving advantages offered by NICE Ball Bearings. NICE can provide a complete range of standard or custom designed unground, semi-precision and precision bearings—and Product Designers can select bearings that insure a properly functioning product, yet one that is economically produced and competitively priced.

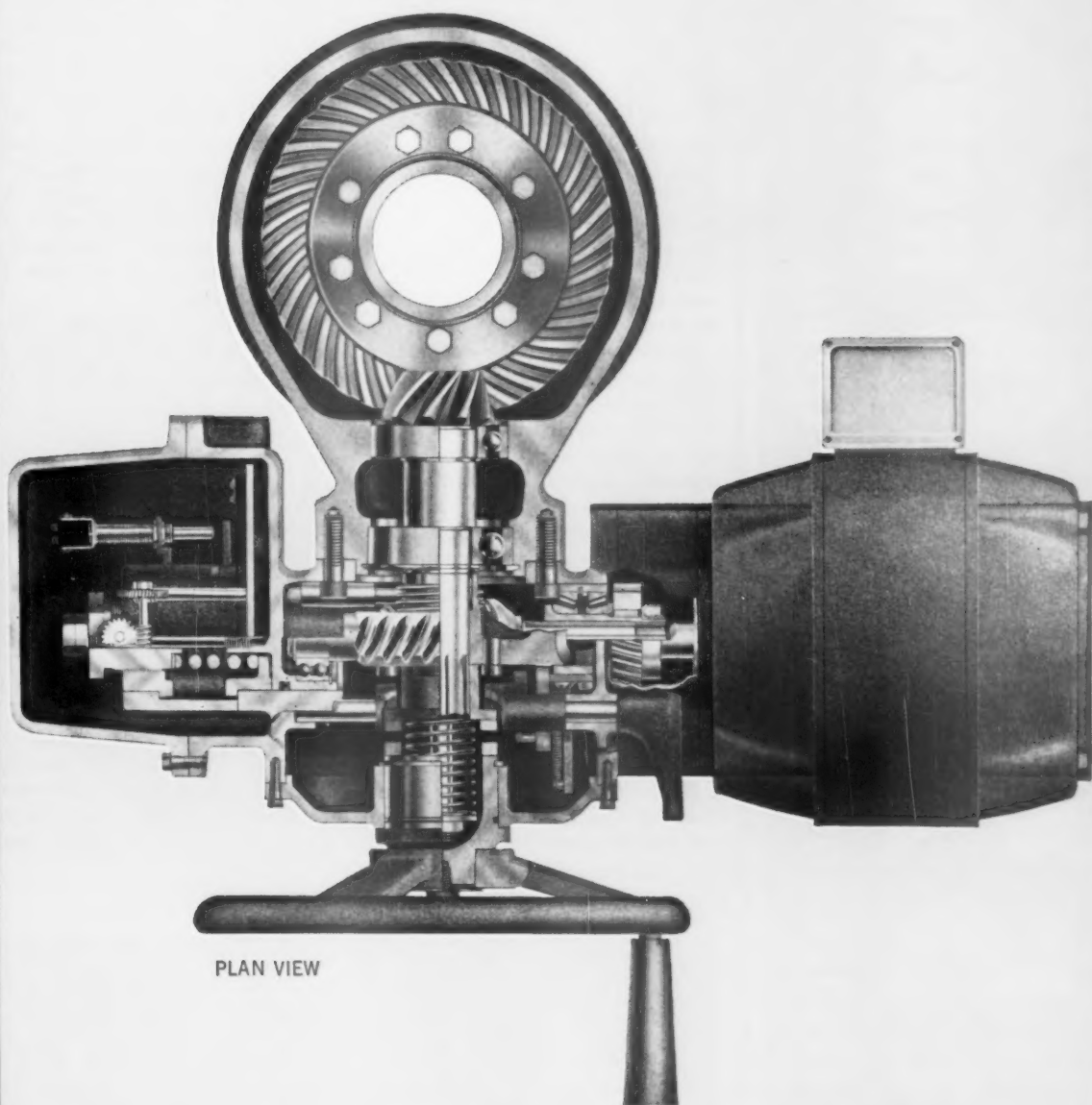
When cost is a problem...yet quality is a MUST...try NICE, for Performance and Price.



NICE BALL BEARING COMPANY
NICETOWN · PHILADELPHIA · PENNSYLVANIA

For More Facts Write No. 189 on Information Card—Last Page

PURCHASING



PLAN VIEW

Now—"Crane Teledyne" motor operator for valves

It's new and only from Crane!

Today Crane is the only full line valve manufacturer that offers its own motor operator; this simplifies and speeds up your ordering and installation. And you get undivided responsibility for performance from one manufacturer.

"Crane Teledyne" was designed to provide torque only (thrust is taken on valve parts). This feature results in lower cost, smaller size and less weight than other operators with comparable output ratings.

We specifically designed "Crane Teledyne" for a wide variety of Crane valves.

You can order it in two ways: as a conversion kit to motorize present valves in minutes; or fully motorized Crane valves straight from stock.

The motor operator is equipped to act as a gear-operated valve (4:1 ratio) in case of electrical emergencies. Available with push-button control or can be programmed for automated operation.

For full information, call your Crane distributor. Or write Crane Co., Industrial Products Group, Dept. M, 4100 So. Kedzie Ave., Chicago 32, Ill. In Canada: Crane Ltd., 1170 Beaver Hall Square, Montreal, Que.

AT THE
HEART
OF HOME AND
INDUSTRY

CRANE

VALVES • PIPING • PUMPS
PLUMBING • HEATING • AIR CONDITIONING
WATER TREATMENT
ELECTRONIC CONTROLS • FITTINGS

For More Facts Write No. 190 on Information Card—Last Page

THE 52100 HOUSE

INDUCTION • CONSUMABLE • LEADED

PETERSON STEELS, INC.

Union, N. J. • Wethersfield, Conn.
Detroit, Mich. • Melrose Park, Ill.

Write No 191 on Information Card-Last Page

58

FOB- "filosoty of buying"

PUZZLED over what to give the kid who has everything? The General Services Administration is offering for sale demilitarized incendiary bomb bodies at its depots in Pine Bluff, Ark. and Tooele, Utah. Sales will be on a sealed bid basis, minimum bid for 50 short tons.

While we're on the subject of gifts, we feel it's to somebody's best interest to report that National Distilleries is planning an ad campaign for Christmas, designed to combat the trend among big companies to prohibit gifts. Theme of the campaign will be: "Has Anyone Ever Returned a Gift of Old Crow?"

This ought to create some interesting situations as recipients of this particular kind of booze try to reconcile company policy and a tradition that National says goes back to Andrew Jackson (who presumably never returned a gift of Old Crow or any other kind of firewater.) We're sure purchasing agents know the right

thing to do. But to those production managers, foremen, quality control people, members of top management, and others who don't know what to do when they have little goodies forced on them around Christmas we offer this ethical guidance:

Show your independence by returning a gift of Old Crow—and say you'd rather have Old For-ester.

ANOTHER good-looking, informative welcome booklet has come across our desk. It's Swift & Company's, carrying the signature of General Purchasing Agent Ray T. O'Neal. Ray issued the new booklet in conjunction with his department's move to Swift's new office building at 115 W. Jackson Boulevard, Chicago.

There were a few nostalgic backward looks at the Stockyards at the time of the move, Ray reports, but once the boys began



Buyer Dick Dedrick of Aeroquip Corp. is congratulated by two comely members of the purchasing department—Judy Van Ess (l.) and LaVerna Roberts—after scoring a record-breaking 148 in the recent Central Michigan Purchasing Agents Association golf outing and walking, or staggering, off with this goofy trophy made of hose assemblies and whatnot.

PURCHASING

inhaling the pure air of the Loop they soon forgot (or may be just disremembered—you never forget the Stockyards) their old haunts.

Along with the booklet, O'Neal sent a letter to all suppliers, describing the new office and the new equipment they would be using in their calls, including direct dial telephones to buyers.

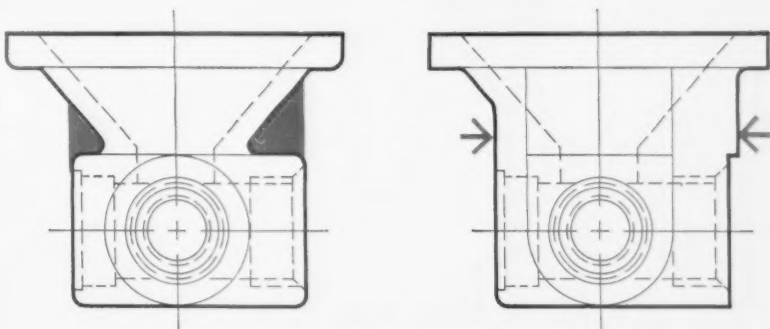
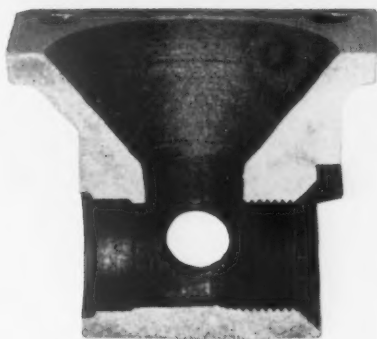
WINNER in a monogram design competition held by the European Federation of Purchasing is none other than G. W. Howard Ahl, executive secretary-treasurer of the National Association of Purchasing Agents. During one of



his rare periods of relaxation, Howard—who once studied architecture—decided to sketch out a design “just for fun” and send it along to John Blinch, EFP secretary. “When they saw it,” reports the EFP Quarterly Bulletin, “the Managing Committee felt that it was the best of all those submitted and decided that it should be adopted as the official monogram.” Howard’s design, shown here, now appears on all EFP publications.

ORDINARILY we are morally outraged by the activities of stock manipulators, bucket shop operators, and their ilk, but we must confess a sneaking admiration for the soaring imagination of the executive officer of a phoney space age enterprise (now under indictment for fraud in New York) who appointed himself “Director of Public Education Control” of the new company.

NOVEMBER 20, 1961



REDESIGN CUT COSTS

A CASE IN POINT—Hamilton Foundry engineers suggested a single design change which saved over 50% in pattern costs and cut the unit price 28% on the quantities ordered.

Curtis Automotive Devices, Inc. uses this casting on their DYNA-FOG® Insecticide Applicator. As initially designed, the part had an undercut which required cores in the mold. Hamilton Foundry's engineers suggested a simplified design which eliminated the cores and made dramatic savings possible in tooling costs and unit prices. You can expect this kind of engineering assistance from Hamilton Foundry.

When buying castings, the skill and integrity of Hamilton Foundry is your best insurance that specifications—and delivery schedules—will be met.

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Stack higher, faster . . . get full use of all potential storage space with a Yale KG-51. Low cowl lets operator see what he's doing, increases efficiency. Dry straight clutch and fluid coupling or fully automatic transmission, power steering. Heavy-duty, self-adjusting self-energizing hydraulic brakes. High lifting speed. Fingertip controls for convenient and efficient operation. High stacking. Cap.: 3000 to 10,000 lbs.



Move bulky, heavier loads faster . . . with one man and a Yale G-3 gas truck. Low center of gravity and heavily constructed frame give stability previously impossible in trucks of this capacity. Widely spaced dual lift cylinders provide maximum visibility for greater safety and operator efficiency. Travel speeds to 20 mph; fully loaded lift speeds to 60 feet per minute. V-8 engine. Power steering. Easy fork adjustment. Cap.: 15,000 to 22,000 lbs.

It's time to look at the

Time to look at the profits lost through wasted space, wasted manpower, excessive handling movements, production delays and other drains caused by an obsolete materials handling program. Other companies are looking . . . and plugging loopholes fast with modern Yale gas trucks. Here are a few of the ways you can save with Yale equipment, too.



Meet production schedules . . . step up operator efficiency. Compact Yale G-5 gas truck packs plenty of muscle for big loads. Lifts at 55 fpm fully loaded. Two-speed, fully automatic transmission, power steering, with channels equipped with roller bearings to reduce friction in lifting and lowering. Accumulator reduces road shock impact on truck and load. Vacuum-boosted, hydraulic brakes. Cap.: 15,000 to 22,000 lbs.



Just right for lighter loads. Nimble, highly maneuverable, Yale G-52 is ideal for handling lighter loads on floors, elevators, trailers . . . and in cramped quarters! Yale advanced-design features include 31½ hp power plant, straight clutch or exclusive fluid coupling operation, fingertip lift and direction controls for maximum operator efficiency. Note the short overall length and width. Cap.: 2000 to 4000 lbs.

high cost of hidden costs

When you modernize with Yale gas trucks you don't just add "new trucks" . . . you get the savings and extra productivity of the *right* trucks doing the *right* jobs. For the Yale line is the broadest in the industry. Yale experts can zero in on recommendations objectively . . . recommend units that meet *your* needs for speed, efficiency, capacity, economy, lifting heights, ease of maintenance.

You get savings and convenience of the *right* financial arrangements, too. Choice of rental plans for peak load situations, flexible leasing and payment plans. See your Yale Representative. Or write: Yale Materials Handling Division, Dept. G-106, Philadelphia 15, Pa. A Division of The Yale & Towne Manufacturing Company.

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TRACTOR SHOVELS • HOISTS**

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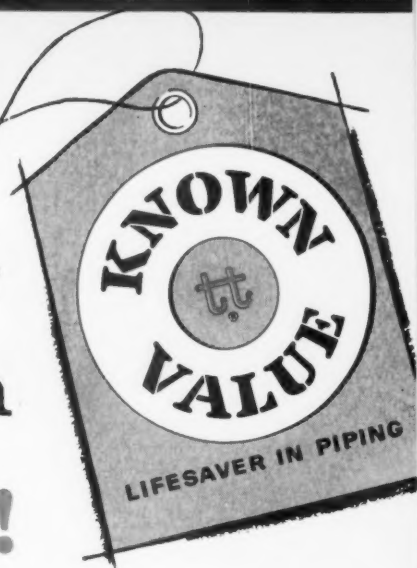


More in-stock items to avoid delays

More specials to avoid makeshifts

More research to prevent trouble

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There was never a time when *known* value was so important, when *extra* care was so necessary in buying components for welded piping systems. It is a time when you must make sure TUBE-TURN quality goes into your job, not merely into your specifications.

TUBE-TURN Distributors and responsible piping contractors are glad to give you this assurance. They are proud to provide affidavits on any job that they have met your specifications to the letter, affidavits in which they identify and describe whatever substitutes they supply within the "or equal" latitude allowed.

You get more of *everything* when you insist on TUBE-TURN welding fittings and flanges, the finest in product and service when you rely on the people who supply them regularly and are proud to prove it. Write for a copy of our new Bulletin 1031-L-251. It's interesting and informative. TUBE TURNS, Louisville 1, Kentucky. "TUBE-TURN" and "tt" Reg. U.S. Pat. Off.

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Corporation



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More technical data to save mistakes



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Men Who Design Piping**

Tube Turns offers not only the most complete line of properly engineered welding fittings and flanges for utmost flexibility in planning any piping installation, but a wealth of technical data and able engineering assistance without counterpart anywhere in the world. Standardizing on TUBE-TURN piping components saves time and trouble.



**LIFESAVER For The
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You're looking at three very pleased men. On the left, the purchasing agent for M. H. Treadwell Co., a major manufacturer of steel mill equipment. He presented his company with savings of \$28,000 in bearings. In the middle, the design engineer to whom he introduced the man on the right. That's the Timken® bearing sales engineer who recommended a smaller, less expensive bearing that had the capacity to handle car loads of molten iron.

Purchasing agents who put their company's engineers in touch with Timken bearing engineers often realize spectacular economies. Timken bearing engineers have

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On the spot
engineering
service with...



TIMKEN®
tapered roller bearings

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Calendar of Coming Events

NOVEMBER						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
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27	28	29	30			

DECEMBER						
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JANUARY						
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FEBRUARY						
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25	26	27	28			

Nov. 20-24. American Management Association: Seminar "Negotiations", A.M.A. Academy, Saranac Lake, N.Y.

Nov. 26-Dec. 1. American Society of Mechanical Engineers: Winter Annual Meeting, Statler-Hilton Hotel, New York.

Nov. 27-Dec. 1. Exposition of Chemical Industries: New York Coliseum, New York.

Dec. 2-5. Society of Reproduction Engineers; American Institute for Design & Drafting; American Records Management Assoc.: International Visual Communications Congress, Biltmore Hotel, Los Angeles, Calif.

Dec. 3-6. American Institute of Chemical Engineers: 54th Annual Meeting, Hotel Commodore, New York.

Dec. 4-6. American Management Association: Seminars on "Purchasing Performance" and "Vendor Relations," Astor Hotel, New York.

Dec. 7-8. The Society of The Plastics Industry, Inc.: Ninth Plastic Film Sheet- ing & Coated Fabrics Conference, Pierre Hotel, New York, N.Y.

Dec. 11-13. American Management Association: Seminars on "Office Materials Pro-

curement" and "Make or Buy," Astor Hotel, New York.

Dec. 12-14. American Society of Agricultural Engineers: Agricultural Engineering Exposition, Palmer House, Chicago, Ill.

Jan. 8-12. Society of Automotive Engineers: Automotive Engineering Congress and Exposition, Cobo Hall, Detroit, Mich.

Jan. 9-11. Eighth National Symposium on Reliability and Quality Control, Statler Hilton Hotel, Washington, D.C.

Jan. 15-17. American Management Association: Seminar on "Traffic and Purchasing," Astor Hotel, New York.

Jan. 22-24. American Management Association: Seminars on "Purchasing Research" and "Purchasing Performance," Astor Hotel, New York.

Jan. 22-25. National Plant & Engineering Show, Convention Hall, Philadelphia, Pa.

Jan. 29-Feb. 2. American Institute of Electrical Engineers: Winter General Meeting and 1962 Electrical Engineering Exposition, New York Coliseum, New York.

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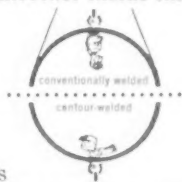
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**"The Gravity Kid" shows how
YOU CAN STOP CONTAMINATION WITH THE HELP
OF CONTOUR-WELDED STAINLESS TUBING**

In tubing, surfaces that are microscopically rough and ragged can cause contamination—simply because of the product becoming incrustated. Contour-welded tubing helps lick this problem because it's smoother inside than any other tubing, welded or seamless.

This smooth surface is the result of Contour-welding, a patented* process that eliminates the weld bead. Unlike conventionally-welded tubing, it's welded at the bottom. Gravity pulls the molten metal down so that the weld area corresponds to the inside contour of the tube. There's no bulge on the inside surface. Even on the outside, the seam closely



conforms to the tubing shape.

In conventionally-welded tubing, gravity pulls the molten metal down into the tube, forming a bead that is difficult to remove by cold working. And cold working can lead to undercuts that become focal points for incrustation.

Even seamless tubing isn't as smooth as Contour-welded tubing. That's because it's extruded or pierced, whereas Contour-welded tubing is formed from uniformly rolled strip steel.

But see for yourself. Write today for our free 48-page manual, which describes sizes from 1/8" to 40" O.D., in stainless and high alloy steels, titanium, zirconium, zircalloy, and Hastelloy**.

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TRENTWELD® Stainless and High Alloy Tubing

Trent Tube Company, a Subsidiary of Crucible Steel Company of America, General Offices and Mills: East Troy, Wisc.; Fullerton, Calif.

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WHEN THE P.A. GOES ABROAD—Purchasing executives who are planning trips abroad may be interested in meeting and talking with their counterparts in other countries. There are now flourishing purchasing associations in over 15 nations according to a list just published in the British "Purchasing Journal." Many members of these associations are eager to exchange views and advice on purchasing matters. For a list of the names and addresses of the associations, just drop a note to the editorial department of this magazine.

REWARDS FOR SUPPLIERS' IDEAS—Do you have a definite policy on rewarding suppliers for special technical assistance on a new idea? Do you announce it and then stick to it? You'll attract more and better vendors if you do. Stated policy of one well-known company: "If you do the development and research work for us on this item, you can be assured of the first order, or series of orders, depending on the type of item involved." If supplier tooling is involved, purchasing's commitment usually covers a longer period.

HOW MANY CALLS PER SALESMAN?—A purchasing agent at a Fourth District Conference workshop described his technique for cutting down on unnecessary sales calls: he calls in salesmen and sales managers of each of his major suppliers, and the buyers concerned, and they discuss their ideas on how many calls are necessary to service the account. Once the supplier knows the P.A. would appreciate fewer calls, he's generally willing to call less often. "We're getting the same service from suppliers," he reports, "but we're saving a lot of time and effort and so are they."

I NEVER SAID THAT!—After a protracted interview with a supplier, you may be vague or confused on certain points that were discussed or decided on. To avoid misunderstanding and misinterpretation make it a practice to take notes throughout long and important interviews, or at least at the most critical points in the discussion. In most cases it will also help to run quickly over the notes with the supplier's representative before he leaves.

PUTTING THE BITE ON SUPPLIERS—Is management putting the pressure on you to put the bite on your suppliers to buy tickets for events sponsored by its "favorite charity" (or perhaps favorite political candidate)? Now is the time tactfully to discourage this kind of polite shakedown. Point out that public reaction—if some supplier decided to holler—might be bad at a time when business ethics are already under attack. Explain that the tactic is little different from demanding a gift from a supplier.

NOW...ROUGH GRIND AND FINISH WITHOUT CHANGING DISCS

• • • get up to 20 times
longer life with new
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Now you can end forever the costly, time-consuming annoyance of changing discs between roughing and finishing. To take off metal rapidly with the new flexible MX® disc, simply bear down—watch the disc hug the workpiece as it grinds off stock. Then let up and finish the job with an easy smooth motion—all with the same disc! Use this remarkable new abrasive tool on flat work or on contours. Use it to remove welds, take out dents and imperfections—for hundreds of jobs on regular steel, stainless or aluminum. Your Carborundum distributor or representative will be glad to help.

Bonded Abrasives Division • Niagara Falls, N. Y.

CARBORUNDUM

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Editorial

He Who Gets Scratched

THERE AREN'T any old people any more; they're "senior citizens." Janitors no longer clean up the schools; sanitation engineers do it. Poor kids are underprivileged, and stupid kids are intellectually underprivileged.

And now there's a new face on a fact of business life that is, like old age, manual labor, poverty, and mental dullness, as old as man. Good old-fashioned reciprocity has lately stepped out of the verbal beauty parlor as "trade relations."

If humanitarian or aesthetic reasons are behind this use of fancy phrases for plain and often harshly simple words, we have no objection. But who's kidding whom when they are used to gloss over the hard realities of life?

Senior citizens are still old and declining; sanitation engineers still have to push brooms around; and the underprivileged are not getting what they should out of life, no matter how we describe them. And trade relations is still basically a matter of you scratch my back and I'll scratch yours. There is nothing morally wrong in being old, poor, dumb, or friendly to your friends. It's wrong to say these things don't happen.

The special report on page 70 shows that reciprocity, or trade relations, as we are willing to call it, is happening in a big way. Since reciprocity is a matter for management decision, purchasing executives must prepare now to live with it whether or not they consider it, to use the words of Prof. Howard Lewis, "a dubious practice." They must learn to adjust to what after all is normal economic behavior, no matter what name it is called.

But adjustment does not mean surrender. If purchasing is to exist as a specialized, profit-making function it should not be made subordinate to sales or marketing for any purpose, particularly reciprocity. That is simply the road to annihilation for purchasing, and it is astonishing and disheartening to see heretofore staunch defenders of purchasing condoning moves in that direction recently made by two large companies which put purchasing under marketing. Given the proper authority, purchasing can use trade relations *to its own and its company's advantage*. But when you're only a junior member of a mutual back scratching team, you've actually been completely scratched as a member of the real management team.

Paul V. Farrell

RECIPROCITY:

Where Does the P.A. Stand?

Reciprocity or trade relations is one of the facts of business life. But it creates definite problems for purchasing. Some say it dulls competition, others believe it is a way for the P.A. to get management recognition. Here are the facts on the demands trade relations makes on purchasing and some guides on how to live with it.

By Leonard Sloane,
News Editor

PERHAPS THE most misunderstood expression in the business world today is trade relations.

Those who practice it privately refuse to talk about it publicly. Those who don't know how it operates attack it unmercifully. And those who regard it as a legitimate business tool are usually unable to defend it effectively.

Why is trade relations regarded by many companies as a skeleton in their corporate closet? It's probably because trade relations originated as one of the most maligned words in industry—reciprocity.

Although trade relations practitioners deny it emphatically, there is little difference between trade relations and reciprocity. Basically both expressions mean "You buy from me and I'll buy from you." Or in more polite terms "Giving preference in buying to those vendors who are customers as opposed to those who aren't." Another term sometimes used for this technique is "complementary purchasing." (In Hawaii, it's called "Hoomale-male"—"you tickle me and I'll tickle you.")

An example of a simple trade relations arrangement is this: a manufacturer of office machines uses steel while a manufacturer of steel uses office machines. Both steel and office machines are avail-

able from a wide variety of suppliers. However, the office machine manufacturer may arrange to buy all or most of his steel requirements from the steelmaker in return for the right to sell him all or most of his office machines.

With the increasing complexity of American industry, trade relations has become an extremely intricate and subtle facet of business life. Examples have been noted recently of secondary reciprocity (reciprocity with customers' friends or chain reciprocity.) In this situation, Company A, which buys from Company B, asks B to tell B's supplier, Company C, to buy from Company A.

P.A.'s Role in Trade Relations

Many of the major industrial companies have separate and distinct trade relations departments or directors. But even in these large companies purchasing agents are directly concerned with trade relations and, in smaller companies, they're often directly responsible for the trade relations program.

Is trade relations a legitimate business tool to be used along with other standard buying-selling techniques? Or is it a Frankenstein monster, created by the sales department?

PURCHASING



TRADE RELATIONS



To answer these and other questions, **PURCHASING** Magazine made an extensive survey of 1000 purchasing agents and 1000 sales managers. About 200 directors of trade relations were also contacted and scores of management executives, purchasing agents, trade relations managers, and sales managers were interviewed.

The results of the study show, first of all, that the bulk of trade relations activities is concentrated in producer goods industries—that is, industries whose products are sold to other industries. For example, trade relations is particularly important in steel, mining, metals, paper, railroads, rubber, machinery, and chemical industries.

There are, of course, minor examples of informal or casual reciprocity in other industries, such as finance and distribution. Publishing also fits into this category, as advertisers sometimes demand editorial coverage for their advertising dollars. However, they comprise a minute proportion of the dollar volume involved in reciprocal purchasing.

On the other hand, 100% of the P.A.'s surveyed report that reciprocity is a major factor in buyer-seller relations in the chemical, petroleum, iron and steel, and other basic raw material industries. In addition, the majority of the buyers in these

industries report an increase in the number and extent of reciprocity problems. More than three-quarters of these buyers say they divide their purchases on a reciprocal basis.

Trade relations is strong in these industries mainly because there is so much opportunity for large-scale purchases and sales between the companies involved. With orders totaling hundreds of thousands of dollars sometimes passing between these industrial organizations, it's no wonder that virtually every trick in the book is used to get the P.A.'s signature on the dotted line.

Reciprocity in Defense Work

A corollary to the survey finding that reciprocity is standard operating procedure in the basic raw materials industries is that trade relations is virtually nonexistent in the consumer goods and defense industries. In consumer goods, a manufacturer sells in great volume to a variety of purchasers. Mrs. Housewife who purchases a can of soup or Mr. Motorist who buys an automobile isn't a large enough customer to pressure Chrysler or Heinz into buying the old man's salami.

And so far as defense and other government buying is concerned, trade relations doesn't exist

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AMERICAN BOSCH DIVISION

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M. Randler
Manager, Purchasing Department

MR/s

Purchasing department at American Bosch Arma Corp. asks customers to bid for orders whenever they make a suitable product. Customers receive this letter which has the names and addresses of the various divisions where salesmen can call. Arma has a definite policy to the effect that "no premiums are to be paid for reciprocal business, nor shall any sacrifice be made in the way of price quality or service."

because the government doesn't have anything to sell other than surplus items. However, there is a reciprocity offshoot in defense work. Many defense contractors have diversified by developing sideline products. Naturally they find that the "good will" they have developed with their defense sub-contractors gives them reciprocity leverage.

In addition to the industries where trade relations is ineffective, there are also some individual companies in other industries where reciprocity is a minor factor. Companies that buy largely from single-source suppliers or those that are forced by economic conditions to buy from competitors are rarely involved in reciprocity.

It's apparent that trade relations is primarily a tool of big business. This doesn't mean that small companies do not use reciprocity when they can, but they just don't have as much opportunity.

This shows up clearly in the survey as 78% of the P.A.'s in companies with volume over \$50 million say reciprocity is a factor in their sales and purchases; in companies within the \$10 million to \$50 million sales range the percentage drops to 62%, and in firms with less than \$10 million volume the percentage is under 50%. Another interesting survey finding: only 4% of all companies taking part in the study report having separate trade relations departments. The figure doubles for firms with sales over \$50 million.

All companies—both large and small—face greater pressure for reciprocal buying during recessions. Correspondingly, pressure becomes more moderate when business conditions improve. During the 1960-61 recession—as in previous postwar slumps—salesmen and their sales managers exerted heavy trade relations pressures on purchasing agents as

One trend that was particularly noticeable last year and early in 1961 was the use of purchasing agents to help sell their company's products. In a number of instances, P.A.'s went along when their company's salesmen made calls on suppliers to help sell the supplier on making reciprocal purchases.

How Trade Relations Depts. Function

Companies with trade relations departments are usually multi-division, multi-plant corporations that produce a wide variety of products. Naturally, the greater the diversification, the more opportunities there are to use trade relations.

What do trade relations departments actually do? Among their many activities, these are some of the more important:

—Periodically forward information about vendors from the purchasing department to sales management.

—Work with the legal department to make sure no laws are being broken.

"This is to inform you that we have no policy regarding this matter. It is not even discussed in any of our business transactions. We do not wish to be quoted in any way."

In some instances, of course, trade relations is used as a defensive measure against similar actions by competitors. But once all the major companies in an industry buy solely on the basis of reciprocity, the effect of the technique is largely cancelled out since no new vendors will be able to sell any of these companies. (Turn Page)





In rare cases where written data on trade relations is found, its importance in adding to a company's sales volume becomes immediately apparent. One company, a leader in the chemical field, says in purchasing's annual report to management:

"Sales to our 100 largest suppliers were \$29,414,000, an increase of \$7,032,000. The \$7,032,000 represents sales to new customers who are suppliers. It also represents increased sales to old customers with whom our sales ties are stronger now as a result of our trade relations activities."

Hold One-Day Trade Relations Forum

Another company that is more open about its trade relations activities is Jones & Laughlin Steel Corporation. Its director of trade relations, Leonard T. Willison, not only operates an efficient and effective organization, but also speaks to various groups around the country about the value and results of trade relations.

According to Willison, good trade relations in no way jeopardizes the traditional purchasing-sales relationship. Instead, he says, it is an adjunct to this relationship and one that is used to create, maintain, and improve commercial friendships. Among the techniques he uses is a "sales-purchase ratio" which "puts the little fellow on the same relative footing with the big fellow."

Trade relations managers usually make their contacts at fairly high management level. They deal with trade relations managers of other companies or with directors of purchases of multi-division corporations. Their job, in the words of one, is "to create a favorable climate of opinion" for their companies' products.

Most big company trade relations managers take a dim view of the brass knuckle approach to reciprocity. They believe trade relations can be handled on the highest ethical plane. To promote the concept of sound trade relations, a group of trade relations men had an informal meeting about a year ago at Whiteface, N. Y. Around 60 representatives from many of the nation's largest companies assembled for the one-day trade relations forum. E. D. Meade, manager of national accounts of United States Rubber Company, served as moderator of the panel. Panelists were:

Howard J. Heffernan, vice president and director of purchases and traffic for Monsanto Chemical Company; W. J. Murr, manager of trade relations for Esso Standard Oil Company; William G. Neel, assistant to the president and director of trade relations for Ruberoid Company; and Jones & Laughlin's Willison.

Define Trade Relations

Purpose of the forum was to "review some of the existing corporate practices of trade relations and to establish some guideposts—both of business ethics and better intercompany communications—among all companies that might have a logical market for each other's products."

One of the major activities at the Whiteface meeting was to provide a comprehensive defini-

tion of trade relations that would be acceptable to all those attending. The definition they came up with is this: "A sound trade relations program creates, develops, and maintains a focal point of commercial entry between companies on an all-product basis, where those companies have either mutual or potential market opportunities for each other. It functions in similar fashion to the interna-

tional practice of reciprocal trade agreements and treaties, without having their binding commitments and without excluding other companies, but it takes advantage of interdependent interests."

The role of trade relations within a company was also discussed at the meeting. Most of those present felt that an effective trade relations program neither preempts the basic function of the

How Purchasing Handles Trade Relations

Companies handle trade relations in different ways, but the approach used by J. M. Huber Corp. (manufacturer of printing inks, chemicals, etc.) is fairly typical. Huber has no trade relations department or manager, as such. The job is handled by the two men in the company best qualified to know the company's trade relations potential: Ed Krech, director of purchases, and Jerry Harris, vice president-sales of the industrial products department.

Every month, Krech prepares monthly and cumulative lists of purchases from major vendors and Harris prepares lists of sales to major customers. These lists are exchanged and used to assist both men in their planning for the future. The lists are not issued to plant P.A.'s or field salesmen; they are used solely at headquarters for high level policy discussions.

Once he has both lists, how does the information affect Krech's buying decisions? To begin with, says Krech, "quality, service, and price are the most important criteria. After that, trade relations starts."

Krech uses a mathematical formula to guide him on trade relations. For example, if Huber's sales to an industry are \$2 million annually and its purchases are \$1 million a year—there's a sales-purchasing ratio of 2 to 1.

"Therefore," says Krech, "if a supplier-customer in that industry is doing an average job for us, he'll get \$1 in purchases for every \$2 in sales. However, if he's doing a better than average job, he gets more than \$1 in purchases for every \$2 in sales. And if he's doing a poorer than average job, he gets less than \$1 in purchases for every \$2 in sales. Vendors learn soon enough what's going on and they usually make every effort to improve."

Huber feels that if one of its customer-vendors has a problem, he should be helped to improve rather than be dropped. "It takes us a long time to train and choose a vendor," says Krech, "so why should we select another one when it costs so much less to assist a supplier we've been using?"

Krech admits that because of the wide variety of products manufactured at Huber plants, only a minor part of its major volume purchases are made from customer companies. However, much of the paper it buys comes from customer companies since Huber makes many items used by paper manufacturers. But Krech notes that "good suppliers don't sell trade relations. They sell their products first."

Whenever a salesman opens a new account with a company that has a product Huber could buy, he passes the word along to Krech through Harris' office. At this point, Krech lets the customer know that his door is always open but makes it clear that vendors must prove themselves first in the areas of quality, service, and price.

By the same token, sales helps purchasing when it is investigating a new vendor. Harris will tell Krech what he knows about a customer's production capabilities, its personnel, and its products.

Both Krech and Harris are aware of the economic realities of trade relations. "Naturally we like to do business with our friends," says Krech. "All things being equal, we will favor our customers."

They are also aware of the pitfalls in trade relations. Says Harris: "Once you start leaning completely on trade relations for either sales or purchasing, you're dead in the marketplace."

300 P.A.'s Reply to

SURVEY

BY INDUSTRY

		Miscellaneous Non-Metallic Products	Chem., Petroleum Other Process Industries
		%	%
1. Is reciprocity (or trade relations) a factor in buyer-seller relations in your company?	yes	68	100
	no	32	0
2. In recent months, have you noticed any increase in trade relations problems because of excess capacity or declining sales?	yes	50	63
	no	50	37
*3. How does your company's purchasing agent assist you in soliciting business from suppliers?			
(a) Mention company products to suppliers		53	71
(b) Provide lists of suppliers by dollar volume		40	71
(c) Make calls on suppliers with company's salesmen		12	46
(d) Other assistance		15	31
(e) No assistance		28	0
4. What percentage of your over-all dollar volume of sales comes from your company's suppliers?	Don't know	17	16
	under 1%	22	0
	1-5%	33	16
	5-10%	5	16
	10-20%	10	36
	20-30%	3	5
	over 30%	10	11
5. When both you and a competitor buy from a certain customer, do you think the customer's purchasing agent should divide the business he gives you in proportion to your importance as his company's customer?	yes	70	84
	no	20	16
	Don't sell to customers	10	0
6. Do you ever get involved in secondary trade relations problems (where a supplier requests business from you because he buys from one of your company's major customers)?	yes	40	64
	no	60	36
*7. Who handles trade relations in your company (please check the departments involved in making decisions)?	Purchasing	48	95
	Sales	40	75
	Top Mgmt.	58	56
	Trade Relations Dept.	12	11
	Others	7	5
	No one	28	0

*Replies add up to more than 100% because some respondents gave more than one answer.

purchasing department nor substitutes for the line sales department. Rather, as one panelist put it, "it is a staff function, most efficiently organized on a corporate rather than divisional level, and it makes use of all internal company resources—purchasing, traffic, financial, and commercial contacts at policy levels—to promote its company's interests. Its basic objective is to assist both its own purchasing and sales departments by employing all corporate assistance and personal contacts where they may help the most."

The practice of swapping information about

trade relations is becoming more common among those who use it, but the subject is still considered fairly confidential. For instance, the American Management Association held an exploratory closed door session on "Effective Management of the Trade Relations Function" in New York last spring, and had a second seminar October 25 through 27. Unlike most other AMA seminars there are no speakers, no course leaders, no outline of the subject—and no press representatives are permitted.

The fact that AMA has suddenly become in-

Reciprocity Survey

Iron & Steel	BY INDUSTRY					BY SALES VOLUME			
	Services	Metal Fabricators	Construction Materials	Electrical	Consumer Goods	Less Than \$10 Million	\$10-50 Million	Over \$50 Million	All P.A. s
%	%	%	%	%	%	%	%	%	%
100	45	56	55	44	36	46	62	78	51
0	55	44	45	56	64	54	38	22	49
69	28	37	31	41	15	20	37	52	35
31	72	63	69	59	85	80	63	48	65
63	21	54	45	58	39	60	54	62	62
39	15	28	16	28	9	12	26	54	26
7	12	8	22	12	6	4	14	24	11
15	12	10	16	2	6	2	18	20	11
23	57	33	28	24	58	38	30	14	25
7	27	9	6	6	27	8	6	30	8
8	15	36	55	28	40	42	34	4	36
0	12	26	22	40	21	30	18	18	28
15	15	17	6	10	9	6	16	6	10
15	19	3	11	8	3	8	18	18	9
15	0	4	0	4	0	2	4	4	3
40	12	5	0	4	0	4	4	20	6
78	46	58	39	52	33	56	52	58	57
22	33	27	50	40	46	24	36	34	34
0	21	15	11	8	21	20	12	8	9
38	17	22	24	16	9	20	28	41	24
62	83	78	76	84	91	80	72	59	76
70	57	54	32	58	60	56	64	72	59
62	27	38	16	40	33	30	40	50	38
62	33	66	55	60	69	72	56	38	64
15	0	3	6	2	3	2	2	8	4
7	9	1	0	0	0	0	4	10	2
0	15	4	0	6	6	4	4	2	1

interested in trade relations seems to be part of a general trend. Along this line, some management consultants have suggested that their clients could boost their profits by setting up trade relations departments.

In the course of the PURCHASING Magazine survey, many P.A.'s approved wholeheartedly of trade relations. One respondent, for example, said that trade relations serves "the mutual interests of companies" and adds that "it's only logical for a company to buy from its good customers."

An Eastern buyer reports that on his own he

notifies his sales department when he makes a large purchase from a company that could buy his firm's products. And a director of purchases notes that "Reciprocity is here to stay." Another P.A. says "Reciprocity is a means of paying cash for good will."

However, a large group of P.A.'s are unalterably opposed to trade relations in any form. "Trade relations is essentially a form of pressure on the P.A. by management or the sales department," says one. Another buyer declares: "In spite of protests that reciprocity will be considered only when price,

service, quality, and delivery are equal or almost equal, it remains a psychological factor which affects the buyer's decision." A director of purchases observes that "Reciprocal buying is expensive; when it starts, sound purchasing judgment goes out the window." Another bluntly states that "It's hard for our people to put ethics before the economic facts of life." The survey also showed that in many medium and large-sized companies, the P.A. has the responsibility for reciprocity since

he is in the best position "to know when and if all things are equal."

Since the decision to use trade relations is usually made by top management, P.A.'s can do little to fight the practice—even if they want to. However, purchasing agents can point out some of the pitfalls involved in reciprocity by:

1) Informing management that reciprocal sales can be costly. Usually the cost of reciprocity is hidden. That is, it's relatively rare when a supplier-

How to Recognize a Trade Relations Situation

The following outline of the various types of trade relations situations that can exist was taken from the purchasing manual of a prominent manufacturer.

1. Trade Relations situations range from the very simple to the complex. These situations are defined as follows:

- a. The source is a customer—or potential customer.
The product is one that is standard priced by both parties.
- b. The source is a customer—or potential customer.
The product price is subject to negotiations by the purchaser.
The seller's product is standard priced.
- c. The source is a customer—or potential customer.
The product is standard priced.
The seller's price is subject to negotiation.
- d. The source is a customer—or potential customer.
The product price is subject to negotiation.
The seller's price is subject to negotiation.
- e. There are two or three sources who are customers (or potential customers) with standard prices. The seller also sells at standard prices:
 - (1) There are a multi-number of sources who are customers all with standard prices.
However, to purchase from all would increase buyers cost either by: Lowering volume so that the unit cost rises: or by increasing the purchasing costs through a multiplicity of records and paper work.
- f. There are two or three sources who are customers, or potential customers. The product price is subject to negotiation. The seller's product is standard priced. The basis of division must be defined:
 - (1) There are a multi-number of sources who are customers or potential customers. Prices are subject to negotiation. Not only must a decision as to division be made, but consideration must take into account that all prices are not equal.
- g. There are two or three sources who are customers, or potential customers. The product price is standard. The seller's price is subject to negotiation. Profit on the seller's product to each possible supplier and the volume of sales with each supplier (customer) must be taken into consideration.
 - (1) There are a multi-number of sources. Purchases cannot be made from all. Customers as sources must be eliminated.
- h. There are two or three sources who are customers, or potential customers. The product price is subject to negotiation. The seller's price is subject to negotiation. The basis of division must be defined, taking into consideration the source and selling factors such as volume and profit.
 - (1) There are a multi-number of sources. Some factors operate as above except some sources must be eliminated. Basis of elimination must be decided upon.



customer refuses to meet competitors' prices. But if a company buys from its customers, inevitably the word will get around. Companies who are not customers will not be so ready to compete. Time and time again, the reciprocity-prone buyer will be paying the "market" price for an item whereas, if his hands weren't tied by reciprocity, he could do a real job of negotiation and buy for less than market.

2) Outlining the absurdity of considering a \$1 purchase as being the equivalent of \$1 in sales. With purchases representing around 52% of the sales dollar and the average pre-tax profit margin of manufacturing companies at about 9%, a \$1 saving in purchasing is equivalent to the profits on \$11 in sales. Therefore, if purchasing could save \$100 by ignoring trade relations and buy from an alternate supply source, it would take \$1100 in customer-vendor sales to equal this saving.

3) Pointing out the legal implications of some trade relations activities. For example, if a P.A.

agrees to a proposal by a salesman that "We will buy so much of your product if you will buy so much of our product," he may be violating the antitrust laws. These agreements are especially dangerous if they require the supplier's company to buy a product exclusively from the P.A.'s company for an extended period of time.

4) Pointing out that reciprocity can result in the purchase of lower quality goods. Where competitors' products are reasonably homogeneous (aluminum, steel, light bulbs, etc.), a company can buy from its customers without fear of getting inferior quality. But when the purchased product is designed by the supplier, it's a different story. A customer's office equipment, for example, may be inferior to that made by a non-customer and the company is making a real sacrifice when it buys reciprocally.

P.A. Must Learn to Live with Reciprocity

However, in spite of the pitfalls, no one seriously doubts that reciprocity is here to stay. Most companies with aggressive trade relations programs wouldn't dare relax even if they were cool on reciprocity, because they would fear loss of business to a rival. And not every company management thinks reciprocity is a "bad" practice ethically; in fact, many feel it's unethical not to buy from your customers.

What does this mean for the P.A.? In most cases, he'll have to live with reciprocity even if he's personally against it. If he's ambitious, he may well accept the idea that "if you can't beat 'em, join 'em." Reciprocity may end up giving him the voice in management he might not otherwise be able to get.

► END



"I see they've got a new P.A. over at Acme."

Reprinted from the January, 1955 Issue of PURCHASING Magazine.

Good Vendor Relations Start in the Lobby

VENDORS all across the nation regard Aerojet-General in Sacramento, Calif., as a potentially rich source of business, and not without reason: As the world's largest industrial organization in the rocket propulsion field, Aerojet last year spent \$139 million on purchasing, subcontracting and construction for its Sacramento operation. In all, it did business with roughly 9000 suppliers.

Because of the essential interdependence of large and small business in the ballistic missile and space technology fields, Aerojet relies heavily on its suppliers, tries to make supplier visits in Sacramento as pleasant as possible.

Nowhere is this more obvious than in the company's new purchasing lobby which was designed with the vendor in mind.

While there are three separate purchasing organizations at Aerojet—Liquid Rocket Plant, Solid Rocket Plant and Polaris program—the lobby serves each. This gives vendors the convenience of "one-stop" selling.

Conference Rooms Are Private

Aerojet does most of its business with suppliers on Tuesdays, Wednesdays and Thursdays, although out-of-towners and new contacts can often arrange an appointment on other days. To take care of its mid-week visitor peaks—often 120 callers per day—the lobby was designed so that the visitor overflow can spill over into the spacious main lobby of the

Solid Rocket Plant engineering building, located immediately adjacent to the purchasing lobby.

Most popular feature of the lobby, designed by the company's Aetron engineering division, is the private conference rooms where buyers and suppliers meet. Without the distractions of phone calls and paper-cluttered desks of the regular offices, buyers find they can give undivided attention to their callers. And if an on-the-spot price estimate is needed, the vendor can spread out his plans and specs on a large conference table, go quietly to work and simply call the buyer when he's

ready to submit a bid. There are 14 such interview rooms, some of which are divided with movable partitions so that larger group conferences may be arranged.

Decorated in contemporary style, the 3700 square-foot lobby features relaxing tones of coral, white and cocoa. Celotex sound panels effectively deaden extra sound in the open-ceiling interview rooms.

Vending machines, rest rooms, telephones, special bulletin boards—and even a microphone call system—all provide a friendly, efficient atmosphere for buyer-vendor relations at Aerojet.

Aerojet-General's receptionist Beverly Holm greets vendors in special purchasing lobby, uses loud speaker system to call visitors. Small business guide above receptionist's head tells vendors whom to contact.





Outer lobby of Solid Rocket Plant engineering building serves purchasing overflow on peak visiting days. Loud-speaker system ties the two lobbies together.

Individual interview rooms, shown here from main lobby area, provide quiet, undistracting place for buyers and vendors to negotiate. Buyers' offices are located nearby.



Receptionist slides back wall partition in interview room in preparation for a group meeting of buyers and vendors. Sound insulation provides privacy.



Individual interview rooms have enough space to enable vendors to spread out material they need to work out on-the-spot bids.



Candy, cigarette and coffee machines, cold water, telephones and rest rooms are available to vendors in purchasing lobby. It's all part of the program to make salesmen enjoy their visits to Aerojet.

How STL Tells Purchasing's Story

SO YOU think you have trouble selling the idea of good purchasing to engineers and operating departments? Consider the problem of John Peterson, formerly manager of procurement and now director of materiel for Space Technology Laboratories, Redondo Beach, Calif.

STL, heavily involved in space system design and fabrication, has grown rapidly from a small group of engineers and scientists to an industrial organization with a professional staff of more than 2,000, plus 2,500 supporting personnel. Purchasing is regularly faced with "way out" engineering requirements and critical delivery schedules.

Misunderstanding between buyer and requisitioner can cause needless delay and expense in such a fast-moving, technically-oriented environment. As STL expanded, Peterson and his department asked themselves: How can we make sure our services are used to the fullest? How can we tell the procurement story?

Brochures Are Successful

Their answer is a series of four-page brochures, issued under the general title "How STL Buys." Each brochure gives a brief description of how Peterson's group handles some phase of procurement—procedures, supplier evaluation, value analysis, etc. Side-by-side outlines tell the



Regular personal contacts supplement procurement's written communications program at STL. Shown here at a purchasing-engineering meeting are (l. to r.): Walt Steffy, senior buyer; C. L. Scott, purchasing manager; John E. Peterson, director of materiel; W. H. Rodner and Dr. Ray S. Miller of the Electronic System Integration Laboratory; and Leo F. Krueger, supervisor of procurement liaison engineering.

requisitioner, "What You Do," and "What Procurement Does for You." (Several of these brochures are shown on the next three pages.)

So far, eight brochures have been distributed to STL's professional staff, at about two-month intervals. Members of the materiel department select their own titles and do the writing and editing for the brochures.

Peterson is enthusiastic about the impact the brochures have had. "We've established a meaningful communication link between purchasing and engineering

and operating people", he says. "We've strengthened buyer-user rapport, and we're both doing our jobs better. And, incidentally, the cost of the whole job is low."

Peterson will be glad to send single copies or the whole series (What You Need; Supplier Evaluation; Procurement Liaison Engineering; The Value Concept, Relationships With the Government; Materials Management; Material Control; Property Administration) to interested readers. Address requests to him at Space Technology Laboratories, Inc., P.O. Box 95001, Los Angeles 45, Calif.

HOW STL BUYS WHAT YOU NEED

This brief introduction to Space Technology Laboratories' procurement service has been prepared to aid you in obtaining whatever items you need.

If an item is not in an STL stockroom, a general knowledge of where to go and how to proceed, it is hoped, will enable you to get more precisely what you need and to get it faster.

The Procurement Department purchases any item needed by any employee of STL. The Department maintains a Technical Procurement Library and employs advisors and buyers in special purchasing areas. These and many other services are available to any member of this company.

To buy many items, all that is necessary is to fill out a purchase requisition, get it signed, and let Procurement attend to the rest. In other cases it may be necessary to determine what types of items are available, or to develop sources qualified to build hardware to our specifications. The Liaison Engineers and Senior Buyers are available to you for assistance.

Legal and practical considerations involving Supplier, competitive source, and Air Force approval may be involved. Some of the highly specialized items required in STL's work are not instantly available. Therefore, calling on the proper Procurement personnel at the earliest date possible, even before firm requirements or specifications are developed, may considerably reduce procurement lead time.

All STL buying is done by commodity specialists in order to increase the probability that the most advantageous purchases will be made for you, and that these purchases con-

form with government regulations, contractual obligations, and company policy.

As an example of commodity specialization, highly experienced buyers are available for consultation in such fields as: electro-mechanical assemblies, office machines, art and photographic supplies, fabricated parts, outside processing, electronic instrumentation and test equipment, tools, catalog and shelf-type electronic components and hardware, accelerometers, gyros, STL-designed electronic components, general supplies—in brief, every item any member of the company might wish to buy. A special group attends to emergency purchases.

The Procurement Department is organized into these divisions: (1) Purchasing, (2) Subcontracts, (3) Liaison Engineering, and (4) Operations.

1. *Purchasing* provides buyers for items which have a fixed price.

2. *Subcontracts* buys those items which have a contractual requirement other than a fixed price (examples: agreements involving cost-plus-fixed-fee, time-and-material, price-redeterminable, etc.).

3. *Liaison Engineering* is organized in such a way that senior procurement personnel are assigned, as your need dictates, either: by specific requirement (example, gyroscopes), by the project (example, Able Star), or by major R and D Laboratories (example, Telecommunications). These men do not buy directly, but serve as senior coordinators and consultants for special requirements.

4. *Operations* handles all intra-department office responsibilities indirectly related to procurement (examples: priorities, small business administration, purchase requisition information, etc.).

WHAT YOU DO

1. Formalize the Request:

Prepare a Purchase Requisition (and, if necessary, a specification). A Procurement Liaison Engineer or a Senior Buyer will give assistance if the requirement is of a specialized nature.

2. Obtain Supervisory Approvals:

Specific signature requirements by dollar level are established by and within your Division, Laboratory, or Department.

3. Obtain Military Concurrence:

Direct charge to government projects often requires "Technical Necessity" approval from the Air Force representative assigned to the specific project whenever dollar value is over \$500, or when only one source of supply is available and value is over \$100. Procurement can help you secure Air Force approval even prior to the start of your work.

4. Coordinate with Budgets:

Public money is being spent, and both company and department funds must be controlled and accounted for.

WHAT PROCUREMENT DOES FOR YOU

1. Placement of Orders:

A firm order is given to the Supplier. In certain instances this amounts to confirming a previously placed verbal commitment. Emergency purchases usually fall in this latter category.

2. Management and Government Approval:

Purchases under \$100,000 are approved within Materiel. Many purchases charged directly to a contract require concurrence of the Air Force Contracting Officer. This is obtained by Materiel.

3. Buying Function:

Sources are determined and Purchase Orders written. Frequently determination of the source has already been accomplished at this point if the Requestor has coordinated with Liaison Engineer or a Senior Buyer.

4. Screening Function:

Immediately upon receipt in Materiel, requisitions are time-stamped, logged in, scanned for adequate data, and routed to a proper Buying unit.

How STL tells purchasing's story (continued)

HOW STL BUYS III PROCUREMENT LIAISON ENGINEERING

This, the third in the *How STL Buys* series, is written to explain the function of the Procurement Liaison Engineering group and how it can assist you.

Knowledge of the function of this group should help you more quickly complete the portions of your projects which require purchased items or outside production activities.

The unique research and development activity at STL dictates a need for a Procurement Department keenly attuned to the requirements for unusual items and materials, often to exacting delivery schedules. It is essential that Procurement keep itself advised of anticipated requirements as soon as they are recognized.

One of the ways in which Procurement Management is kept abreast of requirements of technical groups is through the activities of the Procurement Liaison Engineering (P.L.E.) group. This organization is composed of individuals with academic backgrounds (Bachelor Degrees or equivalent) in the fields of electronics, instrumentation, mechanical fabrication and processing, as well as materiel management and purchasing. Each of these men has an assignment appropriate to his training and background. Additionally, he frequently is given special assignments within the scope of his background of experience.

Procurement Liaison Engineers serve to strengthen and augment the existing bond between M.T.S. and Buying groups. They attend technical design conferences, work with Project Engineers and, in general, gather as much preliminary information as possible about forthcoming procurements. Advance information is passed on to Buyers—all of whom are specialists in their own commodity field—so that they, too, may be prepared to aid in source selections and recommendations to P.L.E. and requesting people.

Procurement Liaison Engineering aids you in several basic ways:

Organizing Supplier-Engineering Conferences: The complex nature of many STL items dictates that a close working relationship be established between Requesters and the Suppliers who actually perform the work. Conferences arranged by P.L.E. help define the parameters of these problems and result in a more satisfactory relationship between STL and its suppliers.

Conducting Producibility Studies: It is important to determine in advance the feasibility of producing many parts or assemblies within the framework of the specifications. Capabilities of available suppliers of equipment and personnel are taken into consideration by P.L.E. from the Procurement point of view.

Conducting Product Application Analyses: A large percentage of purchases are for items that are not made to specifications, but are standard products. These products are evaluated to determine what item will best perform the desired function at lowest cost proportionate to its value.

Engineering-Design Liaison: Procurement Liaison Engineers work closely with technical groups as early in the design stages as possible. They are thus able to supplement the knowledge of these individuals with assistance in source searching and the acquiring of price and delivery information. Assistance is also given in preparation of proposals, purchase requisitions, specification development and resolution of legal, practical and Government requirement problems. In this way the P.L.E. is able to relieve M.T.S. of paper work routine and free him to pursue his projects with a minimum of distraction.

Disseminating of New Product or Process Data: A monthly periodical called the *Breadboard* contains short, condensed descriptions of new products and processes. Detailed information about these articles is kept on file in the Procurement Library. Supplier Catalog files contain over 5,000 catalogs, brochures and periodicals, constantly updated and indexed, which are available for your reference.

WHAT YOU DO

Inform the Procurement Liaison Engineer assigned to your Laboratory (see attached sheet) as soon as there is an indication you will require any products or services.

When you require product or source information, call your Procurement Liaison Engineer immediately.

When you wish to establish availability and/or price information on proposals, phone your Procurement Liaison Engineer immediately.

Visit the Procurement Library if your requirements call for off-the-shelf items. A Librarian will help you find the latest available supplier catalog.

WHAT PROCUREMENT LIAISON ENGINEERING DOES FOR YOU

Establishes as early as possible Buyer cognizance and assists in obtaining product specifications, preliminary prices, and other necessary information for procurement.

Arranges supplier conferences and facility surveys when required for specific procurements.

Assists in the preparation of the purchase requisition and other related documents to assure proper procurement procedure.

Maintains catalogs of products and services available from suppliers.

HOW STL BUYS

IV THE VALUE CONCEPT

This is the fourth in a series of brochures prepared to assist members of the Technical and Administrative Staffs to use the services of the Procurement Department more efficiently.

An increasingly competitive environment dictates close control of STL's annual expenditures of almost one-third of every sales dollar for materials and services. Value Analysis has been practiced by STL Procurement personnel on an individual basis for several years with such success that a formal program has now been instituted. This brochure explains that concept as it affects you.

In a competitive environment, purchased items must be carefully evaluated to determine whether they represent true value in terms of their function to the engineer.

Frequently requesters are concerned with getting projects or designs into reliable, workable forms within time requirements that preclude detailed evaluation of costs of each component, service, or assembly. Value Analysis can aid you with before-the-fact information about costs of alternate materials or processes to perform the desired function. It can be of assistance after-the-fact by calling attention to new developments that help reduce the cost of the established design.

The Procurement Department constantly evaluates its suppliers and their products, always seeking the best value for the dollars it spends. Price is only one consideration in the selection of a supplier. He is also rated by the reliability and quality of his products, delivery dependability, financial stability, caliber of personnel, condition of equipment, and the degree to which he is helpful in controlling costs and offering helpful suggestions for cost reduction or product improvement. All these points affect the total value of purchased items.

Value Analysis is a technique originally developed and used by Procurement people for reducing costs of purchased components for commercially manufactured products. In recent years the technique has spread to all types of industry and has been adopted and used effectively in all branches of the Armed

Forces. Its use is encouraged by the use of Value Analysis clauses in many defense contracts.

Value Analysis identifies the function of each product or component purchased by asking these questions of each item or part:

1. Does it perform a needed function
2. Is its cost proportionate to its usefulness
3. Does it need all of its features
4. Is there anything better for the intended use
5. Can it be made by a lower-cost method
6. Is it made on proper tooling, considering quantities used
7. Can a standard or repetitively manufactured unit be found which will be usable
8. Will another dependable supplier's product perform the same function for less

Conscientious application of these principles will not only decrease costs but may increase reliability and shorten lead time.

Value Analysis identifies the basic function of an item, breaks it into its necessary components, evaluates each of these, and seeks the lowest-cost method of reliably achieving this function without sacrifice of performance. Some analyses may disclose that a higher-priced item will result in lower cost per unit of function.

Buyers and Procurement Liaison Engineers are an essential link in the Value Analysis chain. Their contact with suppliers and their new products and services make Procurement a logical clearing house for ideas for reducing costs of purchased materials or components.

Although Procurement has responsibility for spearheading Value Analysis projects, approval of suggestions is always obtained from requesters and Buyers, and advice is solicited from suppliers or other experts in the field. Success of Value Analysis is based on cooperation and a spirit of working together. It gleams ideas from all departments — like security, cost reduction is everyone's responsibility.

It is essential that every effort be given to reducing costs, increasing efficiency, and otherwise advancing the state of the art in procurement as well as in scientific achievement.

WHAT YOU DO

Call the Procurement Liaison Engineer assigned to your laboratory for information about Value Analysis services.

Keep Procurement informed about your requirements for materials and services.

Make suggestions to Procurement for those items within your area which you feel can be reduced in cost.

Give Procurement full information on requisitions, including the actual function of requested items.

WHAT PROCUREMENT DOES FOR YOU

Evaluates purchased items for maximum function as related to cost.

Makes cost comparisons on existing products or purchased items and services.

Conducts searches for new developments which may lead to reduced cost.

Helps keep you abreast of the state of the art in purchased materials and services.

Can the Buyer Demand Satisfaction?

A vendor's agreement to supply goods that are satisfactory puts the buyer in an unusually strong position. Provided his opinion is reasonable, he can have the last word on whether a product satisfies him or not.

By Albert Woodruff Gray,

Legal Editor

"SATISFACTION guaranteed" is a promise not limited to retail selling. The seller of industrial equipment frequently asserts that his product will be satisfactory. On the other hand, many purchase order conditions require that "material supplied shall be satisfactory."

In most transactions, fortunately, neither promises nor fine print become a problem. When, however, there is a contention between buyer and seller, the question arises, satisfactory to whom: the buyer, the seller, an expert third party, or some mythical "reasonable" man?

Recently, a South Dakota court asked the same question when a vendor sued for the purchase price of several motor scrapers. At the insistence of the buyer, the contract had included the stipulation that "These machines must be satisfactory for ten days."

Replying to its own question, the court observed that such contracts are ordinarily divided into two classes: first, where the fancy, sensibility or judgment of the purchaser is involved; and second, where the question is one of operative fitness.

"The term 'satisfactory' in contracts containing provisions of the character under consideration, without designating the person," said the court, "means satisfactory to the promisor or purchaser."

"When in common language we speak of making a thing satisfactory we mean that it shall be satisfactory to the person to whom we furnish it. It would be nonsense to say that it should be satisfactory to the seller. It would be indefinite to say that it should be satisfactory to a third person without designating the person. It can only be intended that it shall be satisfactory to the person who is himself interested in its satisfactory operation, and that is the buyer."

"This construction is particularly applicable where, as in the instant case, the promisor or purchaser insisted on use of the term in the contract."

Court Interpretations Differ

Courts however have not been in complete agreement with this interpretation. When the determination of the validity of the contract is unreservedly conditioned on the will or wish of the buyer there is no binding contract. This was brought out by a New York court in the early years of the 19th century. A contract for the purchase of land provided that the purchaser would pay the agreed price "three months after they shall be well satisfied" that they hold the land free and clear of adverse claims.

"A simple allegation of dissatisfaction," said the court in that old decision, "without some good

reason assigned for it, might be a mere pretext and cannot be regarded. If the buyer was left at liberty to judge for himself when he was satisfied, it would totally destroy the obligation and the agreement would be absolutely void."

However, a Georgia court took a different approach when it interpreted a contract for an air cooling unit. The contract contained the clause, "This cooler will be installed complete and fully guaranteed to be satisfactory." Breach of this warranty of satisfaction was set up as a defense to an action brought for a recovery of the purchase price. When the appellate court sustained a judgment in favor of the purchaser it said:

"It appears that the seller in the sales contract here fully warranted the air cooling machine to be 'satisfactory', limiting this warranty to five years as to the unit and one year as to the motor. 'Satisfactory' in this connection can have no other meaning than that the cooling machine is satisfactory for the purpose intended by the manufacturer and is thus merely an express affirmation of an implied warranty limited to a certain period of time."

This apparent contradiction between the conclusions in these two cases, that guaranteed satisfaction in one instance relates to the buyer and in the other to the

purpose of the manufacturer, is explained to some extent by the decision of an Alabama court involving a contract for the sale of radio equipment, in which it was provided that notes given in payment of the purchase price should not be paid if the goods purchased were not satisfactory. "The agreement between seller and buyer that the goods shall be satisfactory to the purchaser," said the court, "has a well defined legal significance and is not void for uncertainty."

"It means in respect to machinery that the purchaser after a fair test, is satisfied with the 'mechanical utility or operative fitness for the purpose intended.' This must be an opinion based upon good faith and for a better reason than a mere desire to avoid liability."

Railroad Isn't Held Liable

Another instance that emphasized that the legality and enforcement of a guaranty of satisfaction must not rest solely on the whim or caprice of the buyer, occurred in a Wisconsin action involving the sale of exhaust fans to a railroad in that state.

That contract stated: "I agree to furnish C., M. & St.P. Ry. Co. three 60-inch Blackman's exhaust

fans for their blacksmith shop in South Minneapolis for the sum of \$600 and guarantee that they will exhaust the smoke and gases in a satisfactory manner. If not we will furnish sufficient number to do the work without extra charge. The same not to be paid for until satisfactory to the C., M & St.P. Ry. Co."

Interpreting this clause, the Wisconsin court said: "We think the true rule in such a case is that if the fans are not honestly and in good faith satisfactory to the railroad and the railroad notified the seller of that fact in a reasonable time, then and in that case there had been no sale and the railroad is not liable for the price."

"Many respectable authorities hold that such a sale is strictly illusory and the property passes only at the option of the buyer. But we think the more reasonable rule is the one above laid down and is supported by better authority."

Even closer to the line that divides legal satisfaction guarantees from those subject to the will, wish or whim of the purchaser are agreements for the production or sale of subjects to satisfy the taste of the purchaser.

Such an instance was the sub-

ject of a suit in Connecticut. A widow engaged a sculptor to make a bust of her deceased husband, satisfactory to her. But the finished product failed to satisfy the lady, and the sculptor sued. The court, however, would not see it his way.

"In this case the sculptor undertook to make a bust which would be satisfactory to the buyer," it said.

Court Sides With Buyer

"This case shows that she was not satisfied with it. The sculptor has not yet then, fulfilled his contract. It is not enough to say that she ought to be satisfied with it and that her dissatisfaction is unreasonable. She and not the court is entitled to judge of that."

"The contract was not to make a sculpture that she ought to be satisfied with, but to make one that she would be satisfied with. Nor is it sufficient to say that the bust was the very best thing of the kind that could possibly be purchased. Such an article might not be satisfactory to the purchaser while one of inferior workmanship might be entirely satisfactory."

"A contract to produce a bust perfect in every respect and one with which the purchaser ought to be satisfied, is one thing. An undertaking to make one with which she will be satisfied is quite another."

"The former can only be determined by experts or those whose education and habits of life qualify them to be judge of such matters. The latter can only be determined by the buyer herself. It may have been unwise in the sculptor to make such a contract but having made it he is bound by it."

The Michigan Supreme Court similarly held the buyer's decision as final in a case involving the sale of several printing presses. The manufacturer had stated that the presses would be "free from defective material or workmanship and should do their work satisfactorily." None of them were satisfactory. Although the purchaser's defense failed he had retained and used these machines, the court said in its decision:



"A simple allegation of dissatisfaction without some good reason assigned for it, might be a mere pretext and cannot be regarded."

"When we speak of making a thing satisfactory it would be nonsense to say it should be satisfactory to the seller. It should be satisfactory to the person interested in its operation; that is, to the buyer."

"The weight of authority as well as of reason inclines us to the opinion that the parties must stand to their contract as they have made it and if the seller has agreed to furnish an article that shall be satisfactory to the purchaser he constitutes the latter the sole arbiter of his own satisfaction.

"It is entirely well settled that if the acceptance of a machine is made dependent upon the approval of an engineer or if a pavement is to be laid to the satisfaction of a street commissioner, or if lumber is to be scaled by an inspector the decision of such agent in the absence of fraud, bad faith or clear error, is conclusive.

"We know of no reason of public policy which prevents parties from contracting that the decision of one or the other shall be conclusive. In the case of chattel mortgages the rule is well settled that if the mortgage provides

that the mortgagee may take possession whenever he deems his security unsafe, the mortgagor thereby submits himself to the judgment of the mortgagee on the question of security and the latter is not bound to prove circumstances justifying his action.

"Certain cases, however, establish a reasonable modification of this rule to the effect that the dissatisfaction must be real and not feigned and that the buyer is not at liberty to say he is dissatisfied when in reality he is not, in other words, that his discontent must be genuine."

In another case, the Michigan court made an accurate and succinct summary of the law relating to guaranteed satisfaction. It said:

"The cases where the parties provide that the buyer is to be satisfied are of two classes. Whether the particular case at any time falls within one or the other must depend upon the spe-

cial circumstances and the question must be one of construction.

"In the one class the right of decision is completely reserved to the buyer and without being liable to disclose reasons or account for his course and all right to inquire into the grounds of his action and overhaul his determination is absolutely excluded from the seller and from all tribunals.

"The law regards the parties as competent to contract in that manner and if the facts are sufficient, to show that they did so, their stipulation is the law of the case. The seller is excluded from setting up any claim for remuneration and is likewise debarred from questioning the grounds of decision on the part of the buyer or the fitness or propriety of the decision itself.

Guaranteeing Satisfaction

"The cases of this class are generally such as involve the feelings, taste or sensibility of the buyer and not those gross considerations of operative fitness or mechanical utility which are capable of being seen or appreciated by others.

"But this is not always so. It sometimes happens that the right is fully reserved where it is the chief ground, if not the only one, that the party is determined to preserve an unqualified option, and is not willing to leave his freedom of choice exposed to any contention or subject to any contingency.

"He is resolved to permit no right in anyone else to be judge for him or to pass on his wisdom or unwisdom, the justice or injustice, of his action. Such is his will. He will not enter into any bargain except upon the condition of reserving the power to do what others might regard as unreasonable.

"In the other class the buyer is supposed to undertake that he will act reasonably and fairly and found his determination on grounds that are just and sensible; and from thence springs a necessary implication that his decision, in point of correctness and the adequacy of the grounds of it, are upon considerations and subject to the judgment of judicial triers."

► END



"It is not sufficient to say that an article is the best thing of its kind. Such an article might not be satisfactory to the user while one of inferior workmanship might be entirely satisfactory."

Time Control Boosts P.A.'s Efficiency

*A unique system for planning and controlling time
helps one P.A. get more out of his working day.*

HAROLD Smith, P.A. for General Acceptance Corp., a major national loan and finance company, is a highly organized man. He has to be. Smith buys furniture, fixtures, printed materials and other supplies for G.A.C.'s 286 branch offices, five affiliated insurance companies, and a subsidiary corporation. He conducts up to 50 telephone conversations daily. Several times a month he leaves the company's Allentown, Pa. headquarters for business trips to New York, Philadelphia, or more distant points.

Added to this active schedule are visits from suppliers and service representatives, meetings with co-workers, business lunches,

Smith supervises 15 employees, 10 of whom operate a printing department producing printed material for G.A.C. use. His work with the printing department includes scheduling production, collaborating in design of printed forms, and purchasing printing supplies.

How System Works

A systematic method of personal time control is one of the ways Smith keeps on top of his job. The technique consists of:

- A fingertip record of important data accumulated during the day's activities;
 - A record of travel and other expenses for reimbursement and tax purposes;
 - Reminders of forthcoming activities and events;
 - Raw material for evaluating his own efficiency.
- To keep this information, Smith uses a looseleaf notebook that resembles a desk calendar, a small black desktop filing box, and a wallet style memo unit, all of which were specifically designed for effective time control by Day-Timers, Inc., Allentown, Pa. About five years ago Smith began using the desk Day-Timer, a looseleaf record book with two pages for each day with separate sections for appointments and scheduled events, a "To Be Done

(Please turn to page 208)



Desk book and special wallet-size monthly memo books enable P.A. Harold Smith to organize his time and simultaneously keep track of important notations. At the end of each month he files memo book in desk box for ready reference. Both books are set up to schedule activities as well as record time spent, expenses, and to keep notes.



THE CHAS. H. ELLIOTT CO.

Lehigh Avenue and Seventeenth Street, Philadelphia 32, Pennsylvania

ORDER No.

DATE

CLASSIFICATION

FOR

DEPARTMENT

QUANTITY

DESCRIPTION

INSTRUCTIONS

9517

Form 342 5-30-61 7500

ALL INVOICES MUST BE SENT BY MAIL. SHOW YOUR ORDER NUMBER.
ALL CASES, BALKS AND PACKAGES MUST HAVE ORDER NUMBER MARKED THEREON.
DUPLICATE B/L WITH RATE AND WEIGHT INSERTED MUST ACCOMPANY ALL SHIPMENTS.
ALL GOODS NOT PUT UP TO SAMPLE OR STANDARD OR SHIPPED CONTRARY TO ABOVE IN
VIOLATION WILL BE RETURNED TO US UNLESS WE HAVE BEEN SPECIALLY ADVISED OTHERWISE.
IF YOU CANNOT SHIP AT THE SPECIFIED ADDRESS WE URGE RECEIPT OF THE ORDER STATING
EARLIEST POSSIBLE DATE FOR SHIPMENT.

PURCHASING AGENT

ORDER NO.	
DATE	
CLASSIFICATION	
FOR	DEPARTMENT

PTION

The original of The Chas. H. Elliott Co. purchase order measures 6 x 8, while the three other copies are 5 x 8. The extra inch of space on the original for instructions to vendors and the P.A.'s signature has been eliminated from the other copies so that they will be the same size as other purchasing department forms.

DEPARTMENTAL REQUISITION		
LEATHER DEPT. P DEPT. SHIPPER CUTTER	STOCK ROOM REC. CLERK X DEPT.	DEPT. _____ JOB NO. _____ DATE _____
NAME OF ORDER _____		
QUANTITY	DESCRIPTION	COST
FORM 322 12-18-89 15M V156	SUPPLY CLERK	FOREMAN

PURCHASING

Buffalo Tool & Die Mfg. Co.

PHONE TR 6-2666

SHOW THIS NUMBER ON
ALL PACKAGES, SHIPPING
PAPERS & INVOICES

Blank, Pierce and Form Dies of all Types • Fixtures • Special Machinery

To:			Date:
			Delivery Required:
			Mark For:
QUANTITY	SIZE	ITEM	UNIT PRICE

Bv

PURCHASING AGENT

1. MATERIAL FOR ANY SHOP ORDER NOTED ABOVE MUST BE PACKAGED SEPARATELY AND MARKED WITH BOTH THE S. O. NUMBER AND CORRESPONDING DETAIL NUMBER, IF ANY.
2. THIS ORDER IS NOT SUBJECT TO ERIE COUNTY SALES TAX.

92-0-1011

[illegible]

Nº 7451	<h1 style="margin: 0;">REQUISITION</h1>	Charge _____ F. O. B. _____ Ship Via _____ Terms _____ Date _____
VENDOR _____ _____ _____		

DETAIL	QUANTITY	SIZE	DESCRIPTION

Delivery Date _____
Signature _____

Approved _____

Federal Court Upholds Forwarder Rights To Use Plan III Piggyback Volume Rates

1969-1970 Freight System—Complaint of Motor Carriers Seeking
to Limit H.C. System Approving Volume Rates Between Chicago
New York 10 days Forwarders Can Ship 10,000 Pounds at 30

Carrier Groups Hit
Rate Proposals

Do You Know How to Get Freight Rates Reduced?

Flying Tiger Line
For Specific Cargo Based on Density

Congressional Action on
Rate Privileges
of U.S. Opposed

Air Freight Rate Cuts
Seen If CAB Ends Floor

Higher Truck Rates to Cover
Wage Boost on Coast Sought

By Thomas F. Dillon,
Associate Editor

WHAT DO "wash boilers," "bookcases," and "hospital bed springs" have in common to the traffic man. If he were going to ship them in less than truckload quantities from any point in the United States to any other point, the rate would be identical. All of these items (and thousands of others) are "Class 100" when shipped LTL. The higher the class, the higher the rate in almost exact proportion. A Class 100 rate is roughly double a Class 50 rate and a Class 150 rate is three times greater.

Without the Class system, every carrier would be forced to publish rates for every item that might be shipped from every point on his line to every other point. With Class rates, the carrier publishes rates for each class. In addition, he will also have special com-

modity rates for items shipped in large quantities. In other to get the low commodity rate, you must regularly ship in large quantities. For example, if you regularly buy steel from a large supplier in carload quantities, you would negotiate a commodity rate with the carrier which must also be approved by the Interstate Commerce Commission.

Chances are most of the shipments you receive come under the higher class rates. Almost all LTL or LCL shipments come under higher class rates and so do carload or truckload shipments of a commodity that neither you nor anyone else in your area uses often enough to justify a commodity rate.

Everyone who buys transportation should have at least two books that list classifications for

every item. One for motor carriers, is issued by the National Motor Freight Traffic Association.* The other, for railroads, is issued by the Uniform Classification Committee.**

Determining Shipping Costs

To find out how much it costs to ship any material, you need both a copy of the appropriate classification and the carrier's class tariff. Suppose, for example, that you are going to buy 2,000 lbs of stainless steel from a Chicago supplier. If you were going to buy a full truckload or carload of the steel, you would check to see if there was a lower commodity rate available. But since your shipment isn't a truckload (i.e., about 20,000 lbs to 35,000 lbs), you know you must use a class rate.

You decide to ship by truck, so you look up "steel" in the index of the National Motor Freight Classification and you see the classification "steel, stainless containing nickel or nickel and chromium." This fits the specification of the steel you're going to buy and you note that it is class 50 when shipped LTL. You then look up the tariff for a Class 50 shipment, which might, for example, be \$2.80 per cwt.

Steel carries a Class 50 rate so it costs roughly half as much to ship as the Class 100 items mentioned at the beginning of this article.

The classification ratings section, in addition to indicating the rating of the item, also tells the form of packaging required to obtain the rating shown. For example, less than truckload quantities of textile machines may be shipped "set up, loose or on skids; set up, in boxes or crates; or knocked down, in packages", and are rated at class 125, class 100, and class 85, respectively. Frequently, the form of packaging selected influences the rating.

The P.A. can also use this section of the classification to obtain the exact wording which describes his product from a traffic standpoint. The correct description of the article can do much to insure that the correct rate will be assessed by the carrier. Further, this section can also be used to determine the weight necessary to qualify for volume rates.

The classification is not static. As new products appear or as old products change, additions, deletions, and revisions in the classification are published. For example, the current National Motor Freight Classification Number A-5, which was issued on July 15, 1960 and will be superseded by a

new classification to be published within the next few months, has had 13 supplements in approximately one year. Two of these supplements are now in effect and contain over 1800 changes. These changes concern new items, rating reductions and increases. They also contain wording changes which neither increase nor decrease the rating in the original classification.

Can Change Classifications

Perhaps the most important feature of a freight classification is that it is subject to change. Unfortunately, many shippers do not realize that it is possible to have a request for a change in the classification considered by the classification board.

Many shippers think that once an item is published in the classification, it is set and can never change. Yet, as pointed out above, supplements containing hundreds of changes are issued frequently. These changes represent the reaction of the classification board members to new conditions affecting the physical, economic, or transportation characteristics of the articles concerned.

Here are two examples of recent changes published by the National Classification Board of the motor carrier industry:

		Decrease in Rating	
		Old LTL Rating	New LTL Rating
Item No.	Description		
88420-A	Plates, face or implosion tele- vision or tele- vision tube, in wooden boxes or crates.	65	60
107995	New Item Iron or steel kits, cement compound patching, con- sisting of ce- ment com- pound, metal trowel and metal edger, in inner contain- ers in boxes.		60

In order to have a change considered by the classification board, it is necessary to:

(1) Determine the proper classification board covering the area in which the shipments are made.

(2) Request a supply of proposal forms from the classification board.

(3) Follow instructions care-

fully in completing the forms.

(4) Send the completed forms along with any other supporting data to the classification board.

It is always a good idea to consult with your local carriers in an effort to obtain their support. They can help prepare the proposal and may be able to advise you how similar proposals have been acted upon in the past.

Once a proposal is received by the classification board it is assigned for hearing. Testimony will be solicited from interested parties. The atmosphere is informal, and everyone is given ample opportunity to state his case.

Finally, the classification board will either approve, disapprove, or approve the proposal with modifications. An unfavorable decision can be appealed to the Interstate Commerce Commission, and the action of the I. C. C. can be appealed to the courts. Such appeals are rare, since most shippers and carriers have confidence in the action of the classification board.

How to Judge Rates

If an item is rated too high, it is to the carrier's advantage as well as the shipper's to have the rating adjusted, since the lower rating may encourage increased use, and therefore, more shipments of the product.

At the same time, since the reasonableness of the rating on one article is often determined by considering the ratings on similar articles, if a rating is unjustifiably lowered, shippers of similar but higher rated articles may press for adjustments in the ratings on their products.

Is the article you ship rated too high? Here is a checklist to follow before reaching any conclusion:

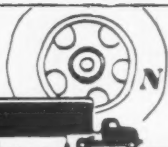
— Has there been a dramatic price cut in the article in the past few years?

— How does its rating compare with the ratings of three or four competing articles?

— Are you packaging the article differently today than you were a few years ago? Does the changed package reduce the cost of handling or reduce possibility

*National Motor Freight Classification is published by the American Trucking Association, F. G. Freund, Issuing Officer, 1424 Sixteenth Street, N.W., Washington 6, D. C.

**Uniform Freight Classification is published by the Uniform Classification Committee, J. P. Hackler, Issuing Officer, 202 Union Station, Chicago 6, Illinois.



National Classification Board

1616 P STREET, N.W.

WASHINGTON 6, D.C.

DUPONT 7-3200

APPLICATION FOR CHANGE IN NATIONAL MOTOR FREIGHT CLASSIFICATION

19

SUBMIT TWO COPIES OF APPLICATION TOGETHER WITH SUPPORTING EXHIBITS OR STATEMENTS. BE SURE TO ANSWER EACH QUESTION PRECISELY AND FULLY, FURNISHING ADDITIONAL INFORMATION ON SEPARATE SHEET IF NECESSARY.

Give full description of Article and Composition. State whether crude, rough, or finished.

- Trade Nomenclature _____
- Is commodity fragile? Yes ☐ No ☐
- Does commodity require refrigeration _____, Heat _____, Special Handling _____?
- Is commodity flammable? Yes ☐ No ☐
- Explosive? Yes ☐ No ☐ Liquid? Yes ☐ No ☐ Paste? Yes ☐ No ☐ Dry? Yes ☐ No ☐
- Is commodity SU _____: *KD _____: Flat _____: Other than flat _____: *Nested _____: *Nested Solid _____: Not Nested _____
- Wheeled _____: Not Wheeled _____: Wheels attached _____: Compressed _____: Not compressed _____:

* KNOCKED DOWN ARTICLES: Ratings on articles provided for KD apply only when the article is taken apart, folded or telescoped in such manner as to reduce the bulk of the articles at least 33-1/3% from its normal cubage when set-up, assembled or expanded.

* NESTED: Three or more different sizes of the article enclosed each smaller within the next largest.

-4 one

119400-120500

NATIONAL MOTOR FREIGHT CLASSIFICATION No. A-5

Item	ARTICLES	CLASSES (Ratings)		Vol. Min. Wt.-Lbs.
		LTL	at Vol.	
	MACHINERY OR MACHINES, OR PARTS NAMED, see Notes, items 114012 to 114024, incl. (continued)			
119460	Dies, cast iron, for stamping corrugated pipe sections	85	45	36,000
119480	Dies, iron or steel, NOI, in barrels or boxes, or if weighing each 500 lbs. or over, in crates or loose, finished surfaces protected	100	55	30,000
119500	Dies or molds, cast iron or steel, for stamping metal ceiling, entrance or siding	65	40	36,000
119520	Dipper handles, dredge or power shovel	55	40	30,000
119540	Dish Washing machines or Dish Washing machines and sink cabinets, with or without sinks, combined, household, in boxes or crates, and Vol. on skids	100	60	16,000
119560	Dishwashing machines, other than household type, in boxes or crates or on skids	92 1/2	360	816.6
119580	Disinfectors, clean pressure, iron or steel	85	45	24,000
119600	Dispensers or cooler barrels, beverage or syrup, wooden, equipped with pipe coils and faucets, in boxes or crates	100	55	24,000
119620	Dispensers, cutting fluid, made of 12 gauge or thinner sheet steel, in boxes or crates	200	200	A6
119640	Distilling apparatus:			
119640	Turpentine, copper or copper and iron or steel combined	200	85	10,000
119660	Vacuum stills, iron or steel, SU, in crates on skids	100	60	20,000
119670	Distilling apparatus, NOI			
119680	Copper or copper and iron or steel combined, LTL, in barrels, boxes or crates, Vol., loose or in packages	200	60	24,000
119690	Iron or steel	100	50	24,000
119710	Doors, metal baling press, with or without fittings, loose or in packages	77 1/2	45	8-24.6
119730	Doors, tractor seat cab, in boxes or crates	85	45	8-24.6
119750	Dredging machines not moved on own wheels			
119770	Dredging machines not moved on own wheels, in mixed Vol. with dredging machine buckets, buckets, boxes or links, steel		45	30,000
119790	Driers, dehydrators or evaporators, fruit or vegetable: SU, in boxes or crates	150	55	24,000
	KD	100	55	24,000
119810	Drill Presses:			
	SU, loose or on skids	100	45	24,000
	SU, in boxes or crates, with or without columns protruding	85	45	24,000
	KD, in packages	85	45	24,000
	Drill press sets, consisting of speed or gear reducing machine, shaves and rubber	85	40	8-24.6

Filing an application with the appropriate classification board is the first step a P.A. must take to obtain a change in a freight classification. Although the applications are detailed, (see above) they are not difficult to complete.

Every item shipped in commerce is assigned a class rating by freight classification boards. The ratings are published in freight classifications. Shown at left is a section of a page from the National Motor Freight Classification.

of damage in transit?

— What classification description is used to describe the article? Does this terminology accurately describe the article in sufficient detail? Is it described in as much detail as similar, competing articles?

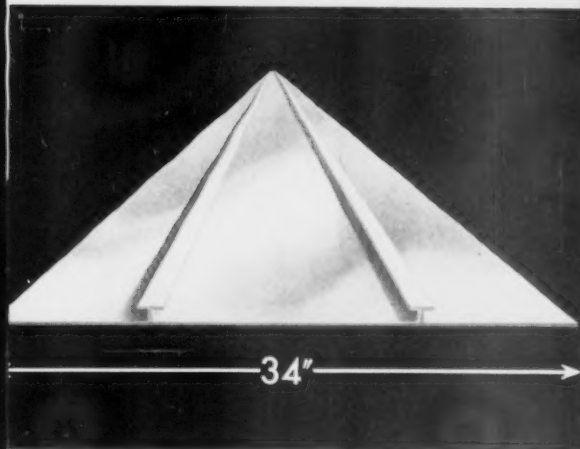
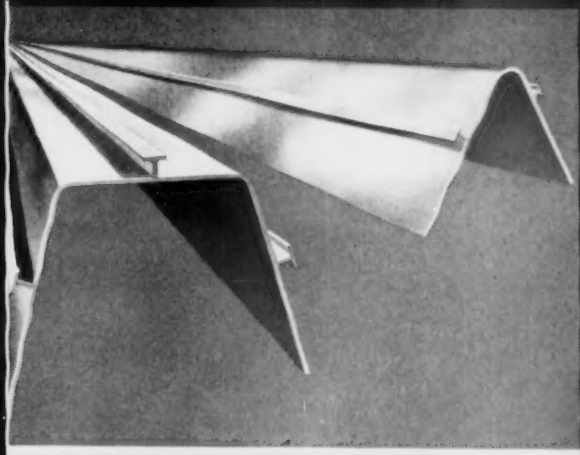
— Have there been any important physical changes in the article? For example, is it now made of a different type material, such as plastic? Is it machined

now instead of being cast?

If a classification change is in order, the classification board governing your area is interested in publishing the change. Publication of such change can save money on every shipment of the item you make, not only for this year, but for every year in the future.

In the past, action before the classification boards has been limited to the comparatively few

shippers who were aware of the significance of the freight classification and who knew the procedure to be followed in proposing publication changes. Since meetings of the boards are held periodically throughout the country, there is no reason why an alert P.A. cannot bring freight classification inequities to the attention of the proper classification board and succeed in having such inequities corrected. ► END



These giant panels are extruded in U-shape with three stiffening ribs, or V-shape with two (top photo) . . . then flattened to close tolerances (lower photo).



The Martin Company photo

DOW EXTRUDES GIANT 34"-WIDE ALUMINUM PANELS FOR TITAN

At Dow's Madison, Illinois, plant, a huge 13,200-ton press extrudes big aluminum panels with integral stiffeners for the Air Force Titan missile. The panels are so wide—34 inches—that they must be extruded with a "U" or "V" cross-section, then flattened and straightened. Panels with three stiffeners get the U-shape; with two stiffeners, the V-shape.

These aluminum 2014 alloy panels are flattened in Dow's contour-correction equipment to close tolerances, then straightened in a 1,000-ton stretcher.

The Dow Metal Products Company's years of large-extrusion experience include production of big parts for aircraft and ordnance equipment, as well as for missiles. Dow's Madison plant is in high-volume production of many different extruded shapes and sizes, in a wide range of aluminum alloys . . . including extrusions with circumscribing circle sizes up to 30 inches, and as long as 80 feet. For information, write The Dow Metal Products Company, Midland, Michigan, Merchandising Dept. 1102EE11-20.



THE DOW METAL PRODUCTS COMPANY

Division of The Dow Chemical Company

For More Facts Write No. 199 on Information Card—Last Page

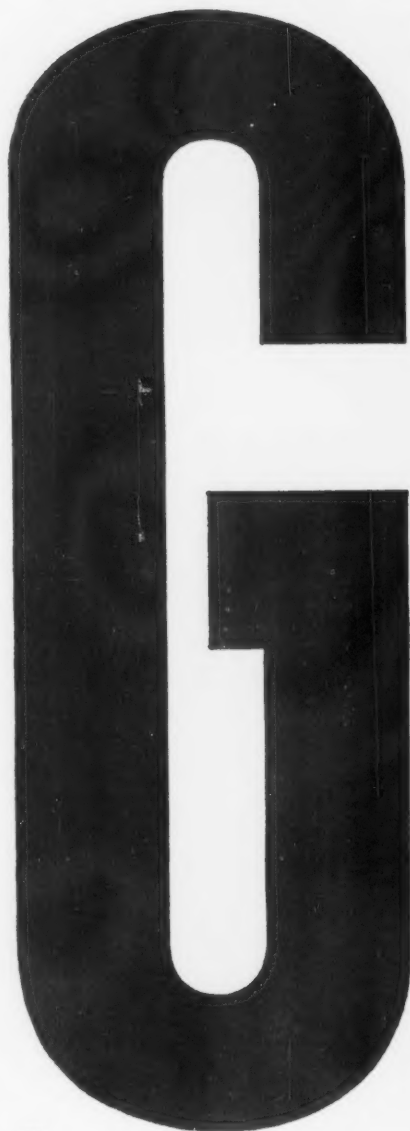
INSIST ON ALL THESE VALUE-



Lumens—Westinghouse 40 watt Cool White Fluorescents produce the high light output needed for normal working conditions. **Where more light is desired, use Westinghouse High Efficiency Fluorescents—3,330 lumens—brightest 40 watt fluorescents available today. Both \$1.30 list.**



Installation economy—You don't have to change fixtures, ballasts, or lampholders to enjoy the benefits of better lighting from these Westinghouse lamps.



Greater lumen maintenance—Maintained light output is just as important as initial output. Even at 10,000 hours, Westinghouse 40 watt Cool White Fluorescents still deliver a terrific 80% of initial lumens!

Westinghouse Lamp Division, Westinghouse Electric Corporation, Bloomfield, N.J.

FACTORS WHEN YOU BUY

H

Hours of life—Because the actual performance of Westinghouse fluorescent lamps far exceeds rated life, you get additional hours of lamp life . . . greater light value . . . at no additional cost.

T

Trouble-free performance—Years of in-service use prove early burn-outs are rare, discoloration is minimum. Quality performance with user-proved Westinghouse lamps is guaranteed!

You can be sure . . . if it's



Westinghouse

New Materials Resist Fuels and Chemicals

FLUROSILICONES—a new group of heat, cold, and oxidation resistant materials—are expected to fit many tough industrial and military applications. Although related to the silicones that have gained wide acceptance in the last decade, the new compounds have unique properties. These products of Dow Corning Corp., Midland, Mich. are semi-organic fluids, greases, and compounds that have exceptional resistance to solvents, fuels, and chemicals.

The basic difference between the new compounds and the popular, or dimethyl, silicones is the substitution of the element Fluorine at specific locations in its complex molecule. This substitu-

tion produces polymers that behave like dimethyl silicones but offer additional properties—such as better solvent resistance and lubricating qualities.

In addition to making fluids, greases, and compounds, the company is also manufacturing a fluorosilicone rubber, designated Silastic LS. Prices range from \$12 per lb for the rubber to \$25 per lb for 100% fluorosilicone fluid and about \$40 per lb for lubricants.

The fluorosilicone fluid is insoluble in most solvents and incompatible with petroleum oils. It will not mix with dimethyl silicone. Because of these properties, it is particularly effective as a defoaming agent and can be

used in such systems as vapor degreasers, dry cleaners, and metal flaw tracers.

The FS liquid also has high lubricating qualities, is practically inert, and is unusually stable—even in liquid oxygen environments. It may be used as a lubricant, a compressor oil, or a hydraulic fluid.

Suitable for Lubricating Valves

Fluorosilicone compounds are produced by blending the FS fluid with inert silica fillers. The resulting grease-like materials provide good lubricity, resist oils and chemicals, and remain serviceable at low temperatures. They are particularly suitable for lubricating valves and in lines handling solvents, oils, and corrosive chemicals.

The FS compounds, because of their inert properties, are effective lubricants for rubber O-rings, grommets, and mounts that come in direct contact with solvents, fuels, or oils.

Dow Corning's FS greases are designed for lubricating bearings of all types. They are essentially fluorosilicone compounds thickened with lithium soap and are serviceable over a wide temperature range.

They are unique because they combine good solvent resistance with good low temperature performance. They continue to work at low temperatures at which materials previously available become hard and brittle.

Write No. 19 on Information Card—Last Page



Fluorosilicone liquid prevents foam in solvent systems. Both cylinders contain the same solvent, but FS fluid was added to the one at the left at a concentration of 3 parts per million. When air is pumped into cylinder, FS fluid causes foam to fall as quickly as it is produced, while it soon fills the other cylinder.

ideas and news

Motor starters offer outstanding dependability — Two years ago, when our engineers designed the bulk out of Allis-Chalmers low-voltage motor controls, they built simplicity into them. With simplicity came exceptional reliability, as demonstrated by a substantial drop in an already low-volume replacement parts business. You can be sure of fewer process shutdowns when you specify Allis-Chalmers motor control—still the most advanced, easiest-to-maintain design in the industry. Sizes from 00 to 9 are available through Allis-Chalmers control distributors.



New system automatically correlates bulk materials data: Through its exclusive SYSTEMATION service, Allis-Chalmers is applying a new data-handling system in a midwestern coal preparation plant. By automatically accepting and storing car and coal information, computing gross and net weights, and transmitting the information to a central billing office, it will speed invoicing, minimize human error, and cut operating costs. If your plant handles large quantities of bulk materials, Allis-Chalmers automatic data handling systems may help improve your profit picture, too. A feasibility study may show you many new possibilities.

Systemation is an Allis-Chalmers servicemark.

Which one of these productive ideas could be working for you?

More-reliable motor controls . . . a low-cost data-handling system . . . speed changers for corrosive atmospheres. These examples demonstrate the extra value that is standard with A-C . . . the greater efficiency and the added productivity which are yours when you buy A-C products, systems and services. Call your Allis-Chalmers representative for details on A-C "worth-more" features. Or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin.

Vari-Tex, Poxeal and Super-Seal are Allis-Chalmers trademarks.

A-C INDUSTRIAL EQUIPMENT DIVISION: motors, control, rectifiers, pumps, compressors, crushers, mills, screens, kilns, industrial systems.

OTHER A-C PRODUCTS: thermal, hydro and atomic electrical generating equipment, electrical distribution equipment, water conditioning equipment, tractors, earth-moving equipment, engines, lift trucks.

A-1573

ALLIS-CHALMERS

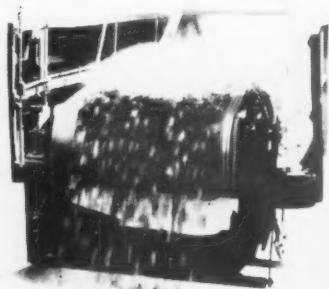
For More Facts Write No. 201 on Information Card—Last Page



VARI-TEX Speed Changer takes corrosive atmosphere in stride: Installed in a midwest chemical company, this 25-hp VARI-TEX speed changer drives a pump through a single reduction gear unit. Entire unit operates in an atmosphere of hygroscopic potash dust which is extremely corrosive when wet. POXEAL insulation system enables the open SUPER-SEAL motor to shrug off virtually all contaminants . . . assures you of long trouble-free service with a minimum of down time.

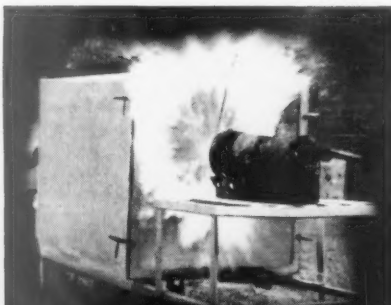


WHEN YOU NEED RESILIENCE... **PLUS**



RESISTANCE TO HEAT

A million tons of hot coke have not harmed this neoprene belt.



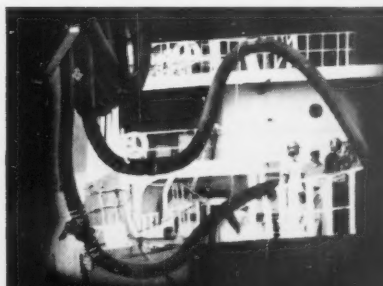
RESISTANCE TO FLAME

Neoprene coated firewalls for aircraft pass this flame thrower test.



RESISTANCE TO COLD

Neoprene remains flexible even at -65°F .



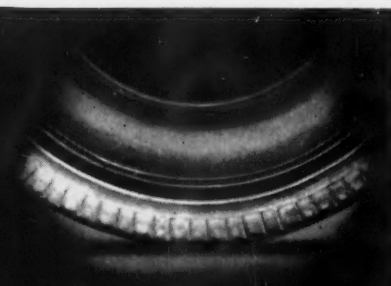
RESISTANCE TO OIL

Neoprene retains its properties in contact with oil and grease.



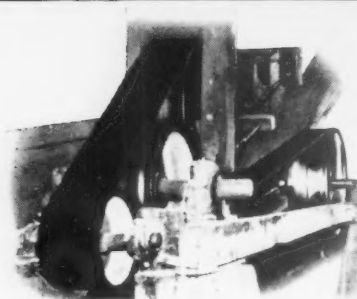
RESISTANCE TO SUN AND WEATHER

After 25 years' exposure, neoprene cable (bottom) shows no surface cracking.



RESISTANCE TO OZONE

Neoprene tire sidewalls resist ozone cracking.



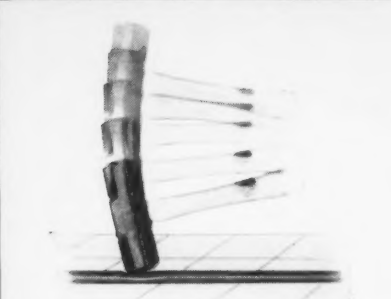
RESISTANCE TO ABRASION

Tough neoprene gives dependable service in severe applications.



RESISTANCE TO CHEMICALS

Neoprene assures protection against most acids and chemicals.



RESISTANCE TO IMPACT

Neoprene has outstanding resilience, resists permanent distortion.

SPECIFY VERSATILE DU PONT NEOPRENE synthetic rubber

A quarter century of industrial service has proven that versatile DuPont neoprene, with this balanced combination of properties, can meet a range of severe service requirements. Neoprene products are

available from rubber goods manufacturers and distributors. For additional information, write E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Department P-11, Wilmington 98, Delaware.

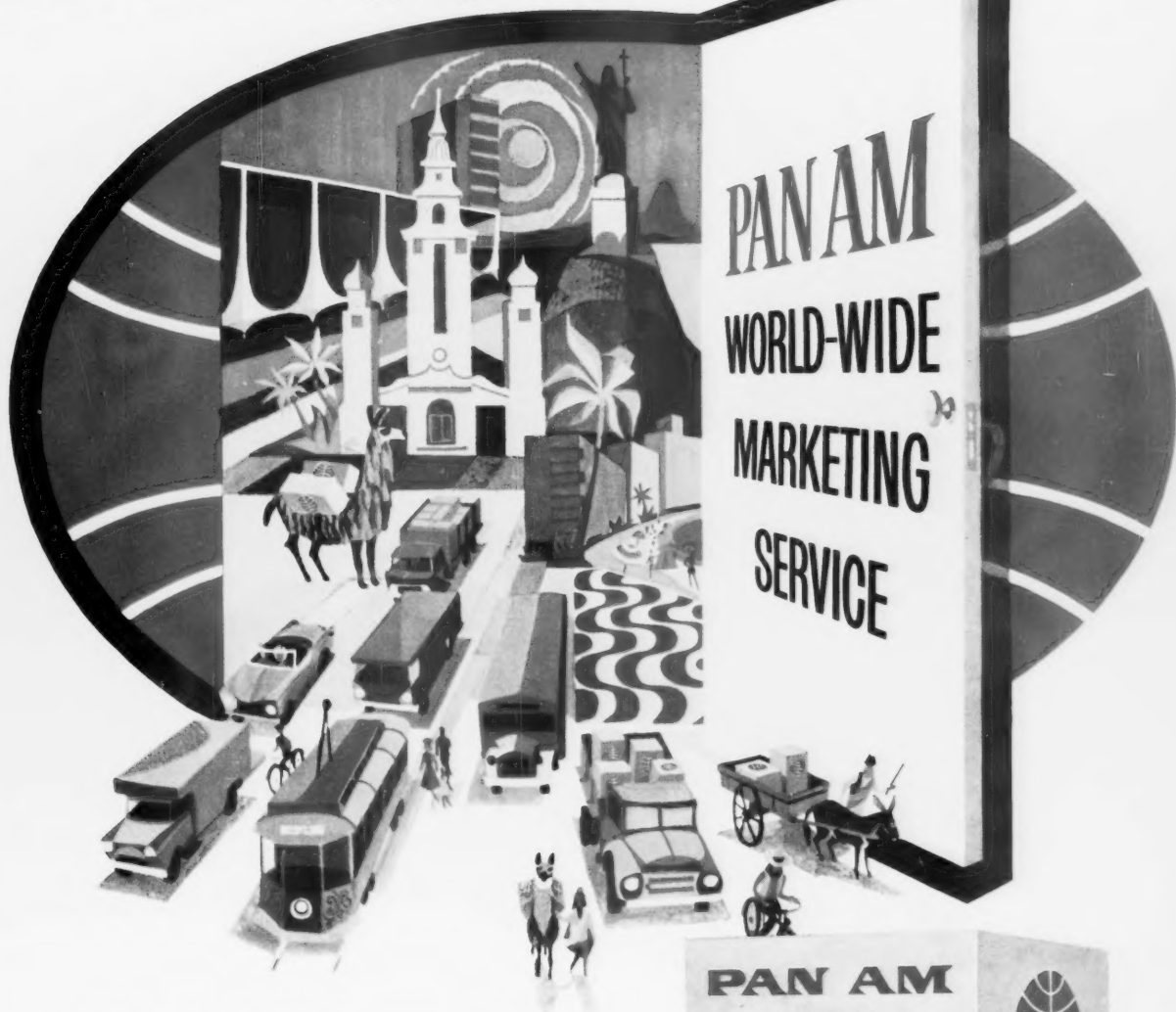


BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

NEOPRENE MAKES TODAY'S PRODUCTS BETTER...TOMORROW'S PRODUCTS POSSIBLE

For More Facts Write No. 202 on Information Card—Last Page

Opens Latin America for easier, more efficient shipping



Pan Am clears the way...opens doors for
your shipments throughout Latin America,
and round the world! And transportation
is only a part of the story.

WORLD-WIDE INFORMATION

Current, valuable, authoritative
information on the world's 114 major
ports in 80 foreign lands!

- Pan Am helps you get marketing facts—plus special needed information.
- Pan Am can help find markets for your product, also distributors, buyers, bankers overseas.
- Pan Am advises all the way on containers, insurance, rates, routes, collections.
- Pan Am monthly magazine lets you in on "inside" information, overseas opportunities!

WORLD-WIDE TRANSPORTATION

More flights direct to more major
markets by the world's largest,
fastest overseas air cargo fleet!

- Fastest delivery overseas, from 15 international gateways in U.S.! Plus faster ground procedures.
- One source for documentation, plus world's largest international truck-air system, cuts transfers, red tape.
- More space, more speed! More all-cargo planes and over-ocean Jets.
- Rates lower than ever! In more and more cases, distribution by Pan Am costs less than by surface.

WORLD-WIDE REPRESENTATION

More American and English-speaking
personnel to represent you
and your shipment overseas!

- You get 114 world-wide offices—at no extra cost! Your shipment is handled the way you want.
- An American viewpoint on the spot from American-trained personnel with local market know-how.
- World-wide contact service! Pan Am's integrated sales/service organization takes the hitches out of world shipping.
- World-wide follow-through makes world's surest delivery!

PAN AM CARRIES MORE CARGO TO MORE PLACES THAN ANY OTHER AIRLINE

Call your cargo agent, freight forwarder or Pan Am office.

THE BIG DIFFERENCE IN A BRUSH IS THIS NAME ON A BRUSH

When you buy brushes that carry the Osborn name, there's no guesswork. You know the quality is there. Osborn quality always pays off . . . jobs are done better, quicker, less expensively.

For over 68 years Osborn has made the widest range of fine power, paint and maintenance brushes available anywhere. And even at this moment, the search for improved products is going on at Osborn to make the best even better. For your copy of our new catalog—write or call *The Osborn Manufacturing Company, Department U-69, 5401 Hamilton Avenue, Cleveland 14, Ohio. Phone ENdicott 1-1900.*



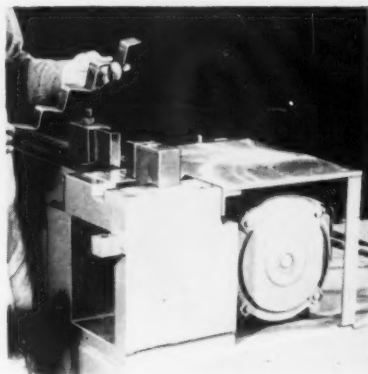
Metal Finishing Machines . . . and Finishing Methods
Power, Paint and Maintenance Brushes • Foundry Production Machinery



For More Facts Write No. 204 on Information Card—Last Page

Products

Ram-type Bending Brake Forms Many Part Shapes



A ram-type bending brake is designed to form flat stock into a multitude of part shapes. It has capacity up to $\frac{1}{4}$ in. by $2\frac{3}{4}$ in. cold rolled steel and operates at speeds to 50 cycles a minute. Rugged machine is powered by self-contained $7\frac{1}{2}$ hp, 2000 psi hydraulic system, acting through toggles to provide greatly multiplied bending force. Pedestal-type control station activates the machine electrically. Foot switch frees both hands for fast work-piece handling. **Pines Engineering Co., Inc., 601 Walnut St., Aurora, Ill.**

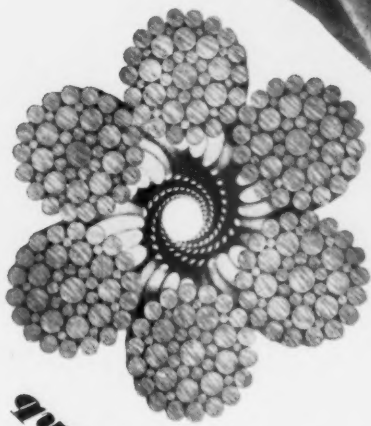
Write No. 19 on Information Card—Last Page

Work Platform Lifts Up to 1500 lbs.

A heavy-duty line of hydraulically adjustable work platforms features platform adjustment ranges of up to 12 ft on standard models, able to lift up to 1500 lbs. Completely mobile units include heavy-duty leveling jacks for stability on uneven or sloping floors. Available in single or double scissor models, platforms are designed for utmost stability and load carrying capacity. Non-skid, self-cleaning, serrated grating on platform working areas provides maximum safety. Operation can be either electro-hydraulic or air-hydraulic, with "dead-man" controls on platform guardrail. **The Ballymore Co., Lincoln and Garfield Aves., West Chester, Pa.**

Write No. 20 on Information Card—Last Page

We put
a lot of
work into it —
You get a lot
of work out of it



Quality inside and outside

Here are two "close-ups" of Roebling Royal Blue Wire Rope which show in part where your savings come from . . . uniformity of structure. Invisible, but equally important, is Royal Blue's extra high tensile strength. All the way through, Royal Blue pays off for you on every kind of wire rope job. Find out more from your wire rope distributor, or write for free booklet to Roebling's Wire Rope Division, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities
John A. Roebling's Sons Division
The Colorado Fuel and Iron Corporation.



For More Facts Write No. 205 on Information Card—Last Page



J-22174

**15% IN LIFE-LINE A-C
MORE MOTORS. Get 15%
HP! more motor
at no increase
in price. Now,
1-250 HP totally enclosed
motors, with Class "B"
insulation as standard,
safely handle 15% larger loads, or, at
rated capacity, will run twice as long!**

For the added plus of guaranteed protection against motor burnout specify Guardistor® on all Life-Line A-C Motors.

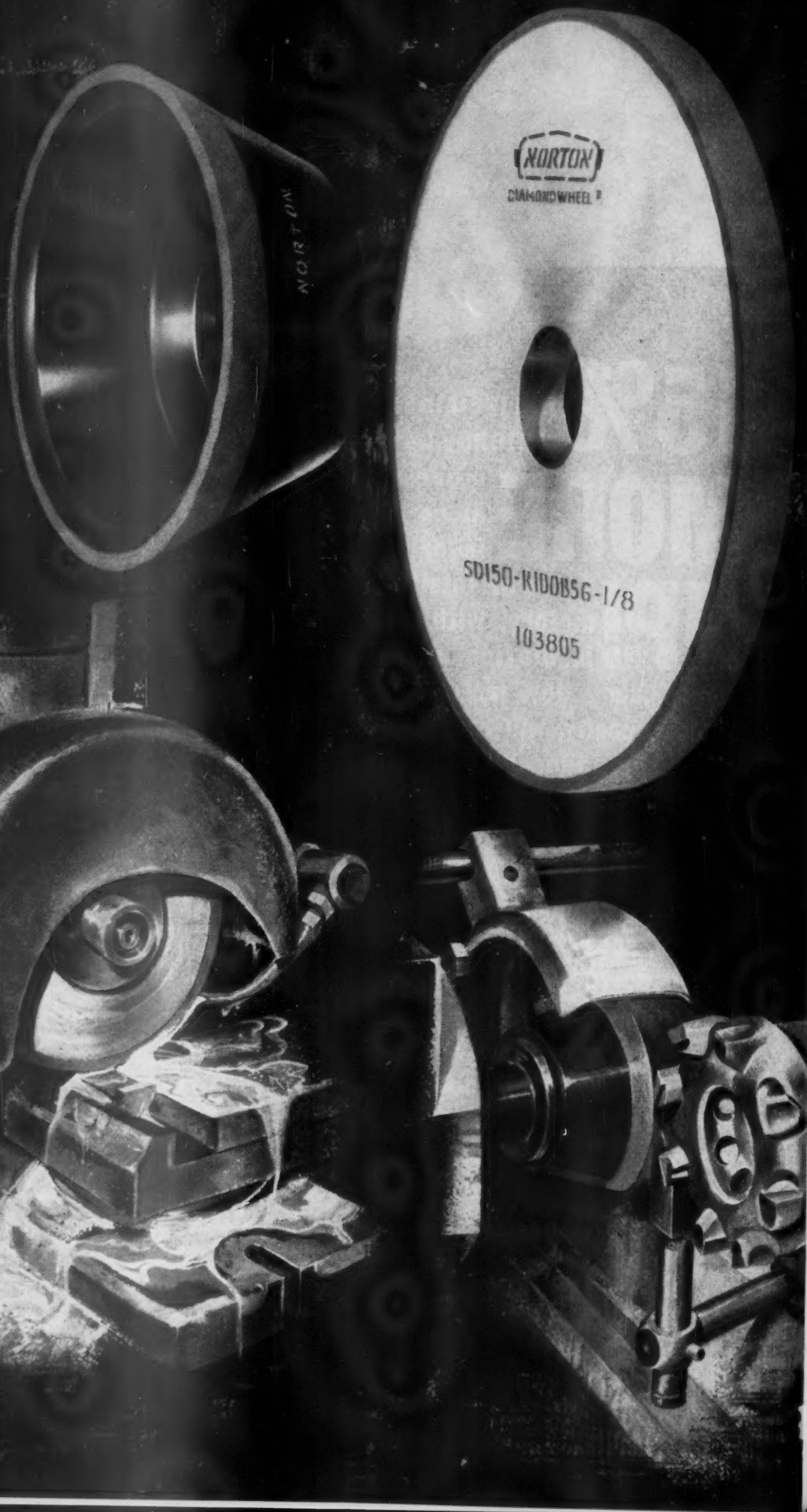
Westinghouse now offers the industry's most complete line of motors, gear-motors, speed reducers and adjustable speed drives. For expert counsel in selecting torque delivery products to meet your specific needs, call your Westinghouse salesman or write Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa. You can be sure . . . if it's Westinghouse



NEW

from

NORTON



THE DIA-CROWN LINE...

*with the first really new bond
in all diamond wheel history!*

*...B-56, an unparalleled advancement for all carbide grinding
...wet and dry*

Since Norton Company developed the first diamond wheels for industry in 1929 it has been the leader in diamond wheel progress — first the resinoid bond, then the metal and vitrified bonds.

Now comes another "first" from Norton, a brand-new bond, the B-56, an outstanding development combining greater productivity and economy for either wet or dry carbide grinding in ONE bond — providing the finest diamond wheels, the Dia-Crown line, ever produced for tool sharpening, die grinding and all other carbide toolroom or production jobs.

In test after test on the widest range of carbide grinding, wet and dry, in customers' plants, Norton Dia-Crown B-56 wheels have outperformed all other wheels with major results — per job — including the following:

- Increased volume of carbide removed, per unit of time.
- Longer wheel life without sacrificing speed of cut.
- More workpieces handled per wheel.
- Considerably lower wheel cost per cubic inch of carbide removed.

Believable? . . . It sure is! Look at these quotes from customer reports!

"Wheel was so good we could hardly believe it, and checked test results again . . . still showed 30% longer wheel life."

"This wheel reduced grinding costs from 13¢ to 7¢ per tip."

"An extremely fine wheel. Cuts more carbide in a given time than any other wheel."

"Best wheel ever used. Will convert to this for all our diamond wheel operations."

That's what our customers say — and it's due to this entirely new Norton resinoid bond — a truly outstanding development. Norton Dia-Crown wheels with this new bond are available in all types and sizes for carbide grinding. Remember, too, that if two wheels of the same size and type have been required for wet and dry grinding — this ONE new wheel will now do both — wet or dry, reducing inventories and cutting costs.

Get complete facts on how this new Dia-Crown line of diamond wheels can improve your carbide grinding and save you time and money. See your Norton Man, a trained Abrasive Specialist, or your Norton Distributor. NORTON COMPANY, General Offices, Worcester 6, Mass. Plants and distributors around the world.



W-2024

Making better products . . . to make your products better

NORTON PRODUCTS: Abrasives • Grinding Wheels • Machine Tools • Refractories • Non-Slip Floors — **BEHR-MANNING DIVISION:** Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes

For More Facts Write No. 207 on Information Card—Last Page



**"THIS LUBRICANT
SAVED US
\$2,098.16
IN SEVEN MONTHS"**

—says THE BROWN COMPANY
Quality Paper Makers of Berlin, N. H.

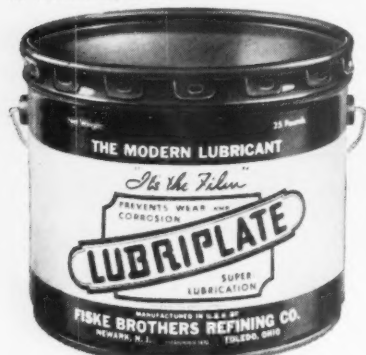
"During a seven-month period before using LUBRIPLATE No. 130-AA in the bearing of our Kraft Mill Lime Kiln, we used a conventional oil at a cost of \$2,134.00. In the seven months that followed, we used LUBRIPLATE No. 130-AA for initial filling and replacement at the cost of \$35.84."

**REGARDLESS OF THE SIZE AND
TYPE OF YOUR MACHINERY,
LUBRIPLATE GREASE AND
FLUID TYPE LUBRICANTS WILL
IMPROVE ITS OPERATION AND
REDUCE MAINTENANCE COSTS.**

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



Write No. 208 on Information Card—Last Page
108

Products

Tellurium in Steel Doubles Cutting Speed

Tests on a free-machining steel produced by the addition of tellurium indicates cutting speeds almost twice those of best free-machining steels now on the market. Initial production of tellurium-bearing steel will be limited because of substance's scarcity, even though only a few hundredths of one percent by weight are needed. Industrial application of substance is now expected to spur development of additional sources of supply. Present output of tellurium-bearing steel is almost entirely in form of hot-rolled bars which are sold to cold drawers who after processing supply material to metal-working trades. Inland Steel Co., 30 W. Monroe St., Chicago 3, Ill., or La Salle Steel Co., 1420 150th St., Hammond, Ind.

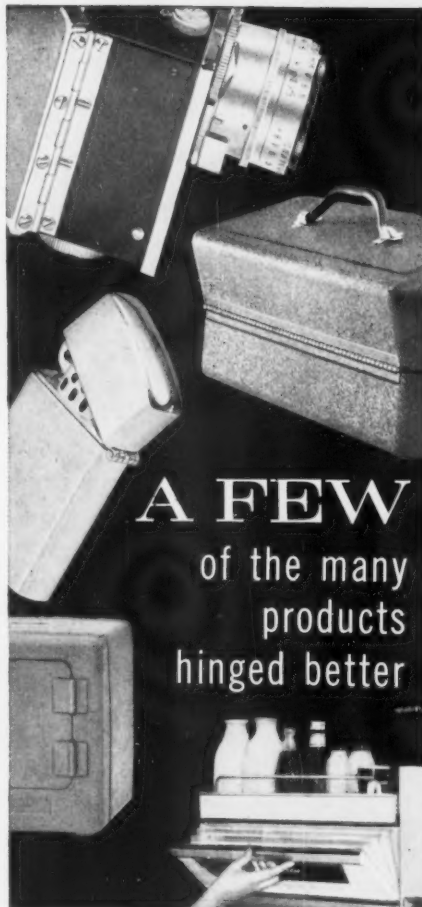
Write No. 21 on Information Card—Last Page

Storage Units Are Easily Assembled



"Instant" storage units of three and four-shelf design come in convenient ready-to-assemble kits. A total of 120 packages, precisely cut slotted angle storage units are available in 6, 7, 8, and 9 ft heights, in 2, 3, and 4 ft depths, and in lengths from 36-60 in., in 6 in. increments. Slotted angle is also offered in standard 10, 12, and 15 ft lengths for shear-to-size use to meet specific needs. Acme Steel Co., Fabricated Materials Div., 135th St. and Perry Ave., Chicago 27, Ill.

Write No. 22 on Information Card—Last Page



A FEW
of the many
products
hinged better

by *Wagner*



over
60 years
experience in
hinge design
and
manufacture

Hinges for every application
write -- no obligation

E. R. WAGNER
Manufacturing Co.
N. 32 St.
Milwaukee 9, Wis.



Write No 209 on Information Card—Last Page
PURCHASING

**"When we're looking for new local suppliers,
we look to the Yellow Pages,"**



America's buying guide
for over 60 years!

says Al Lunn, Chief of Purchasing — Stores, United Air Lines, Denver, Colorado



"It's always surprising when we stop and realize how many different suppliers we locate through the Yellow Pages."



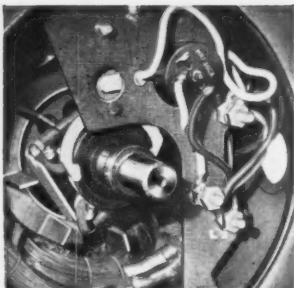
"We do a lot of purchasing here in Denver, and rely on the Yellow Pages to locate suppliers, get quotations."



"We keep a Yellow Pages library on hand to help us with the local purchasing we do in towns where we operate."

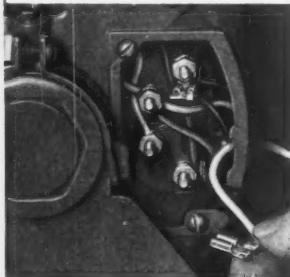


"The Yellow Pages also helps us dispose of various pieces of equipment that we no longer have any use for."



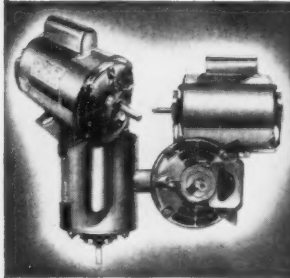
Quick Break Switch

The starting winding is disconnected from the line by this Wagner designed switch... test proved to make more than a million breaks. (That adds up to two starts per hour for 50 years!)



Quick Connect Terminals

Brass tabs on terminal studs permit quick, easy connection of leads... cut wiring time to speed assembly line production. Simply press the lead receptacle on to the stud—a positive connection is assured.



All-Angle Operation

The sleeve bearing design, in fractional hp ratings, has a positive lubrication system that permits operation in any position... can mean important savings in motor costs to manufacturers.

NO STARTING PROBLEMS with WAGNER CAPACITOR-START MOTORS

Pack more power into less space...give long troublefree service...are easy to hook up

Here are general purpose single-phase motors that have high starting torque and high pull-in torque. When used in the proper application and supplied with voltage close to their rating, they'll give positive starts every time. Troublefree operation is assured... thanks to the positive action of the Wagner governor mechanism and long life quick-break switch.

Wagner Type RK Motors pack more power into less space. Small enough to fit in tight spots, their ruggedness is built-in... permits direct mounting. They are available in a range from $\frac{1}{4}$ through 5 horsepower, with sleeve or ball bearings, and with rigid bases or resilient mountings. And, sleeve bearing flp models can be operated in any position.

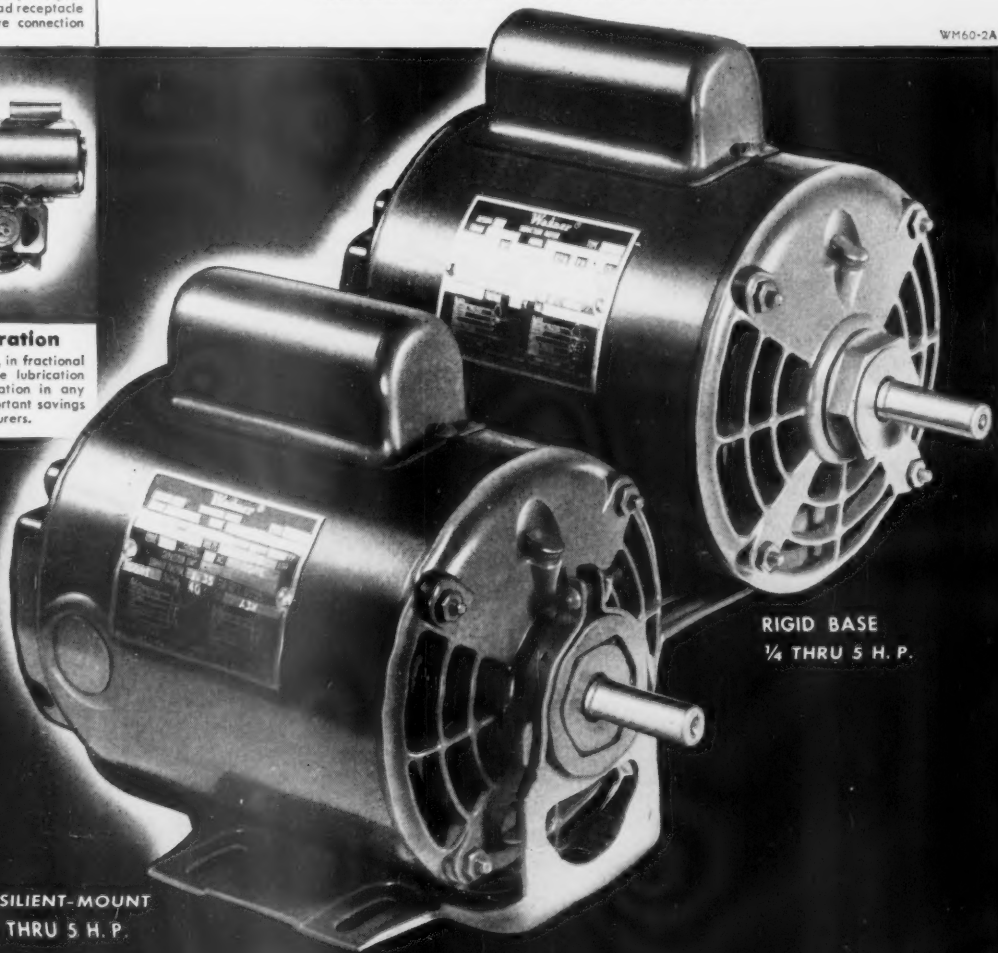
Get these motors from leading distributors in your city, or from Wagner Sales Offices in 32 cities across the country. Your Wagner Sales Engineer will be glad to help you select the right motor for your application. Wagner Bulletin MU-217 gives full details on Capacitor-Start Motors.

Wagner Electric Corporation

6360 PLYMOUTH AVENUE, ST. LOUIS 33, MO., U.S.A.

Manufacturers of LOCKHEED® Products

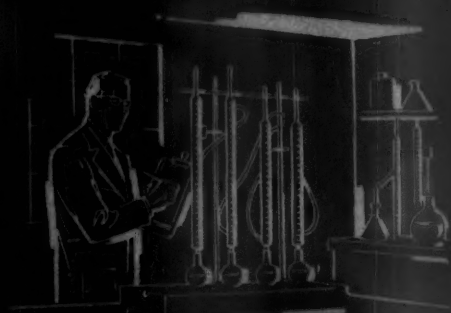
WM60-2A



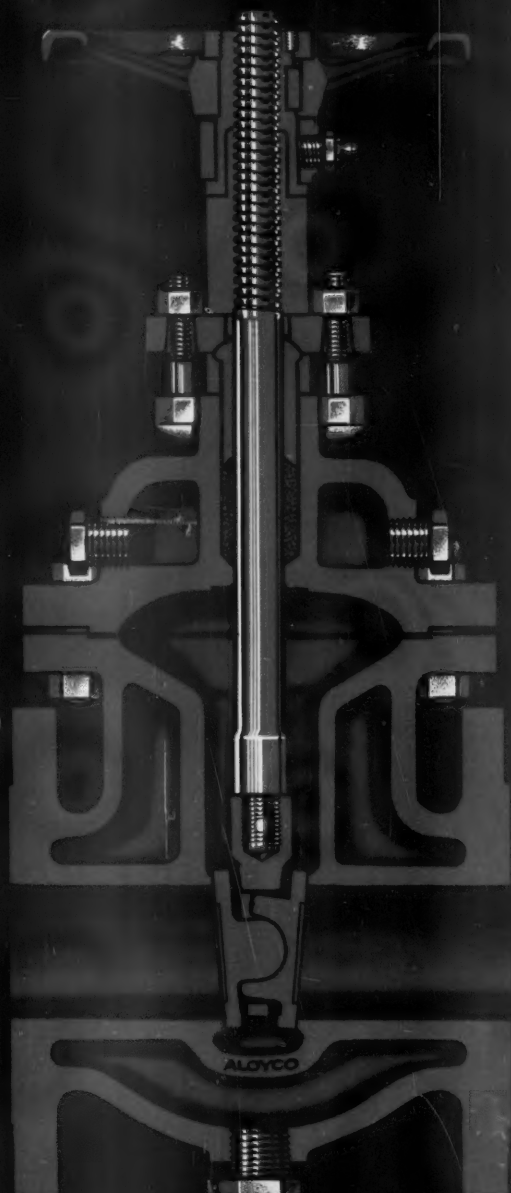
RIGID BASE
 $\frac{1}{4}$ THRU 5 H. P.

RESILIENT-MOUNT
 $\frac{1}{4}$ THRU 5 H. P.

For More Facts Write No. 210 on Information Card—Last Page



Over thirty years'
research devoted
exclusively to...



STAINLESS STEEL VALVES

Aloyco's specialized research... in the field and in the lab... brings you a wealth of metallurgical information for successfully solving your corrosives handling problems.

Coupled with continuing research in design, foundry and machining techniques, this Aloyco specialization results in new and better corrosion resistant valves for many specific applications. One example above: Aloyco completely jacketed valves (the first ever to be integrally cast in high alloys) are designed for viscous liquids and other fluids difficult to move at room temperatures.

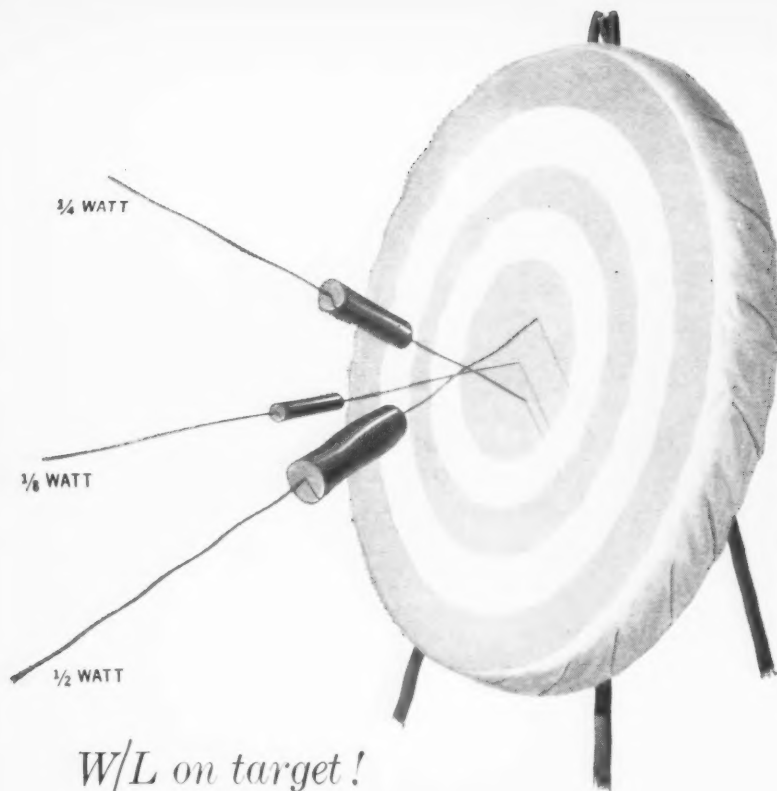
Isn't your surest source of supply the one company with research, manufacturing and sales all devoted to Stainless Steel Valves exclusively?



ALLOY STEEL PRODUCTS COMPANY
SUBSIDIARY OF WALWORTH COMPANY

Boston • Wilmington • Atlanta • Birmingham • Baton Rouge • Buffalo • Pittsburgh • Chicago • St. Louis • San Francisco • Los Angeles • Seattle





W/L on target!

New METOHM line exceeds MIL-R-10509D

As a supplement to the unexcelled VITROHM resistors, Ward Leonard now offers to designers of commercial, military and industrial electronic equipment a line of molded metal film precision resistors, designed and tested to exceed the requirements of MIL-R-10509D, characteristics B, C and E. You can stake your reputation on Ward Leonard resistors.

Available in $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{2}$ watt sizes, W/L METOHM precision resistors feature the highest degree of built-in reliability and operating stability. Temperature coefficients, over the range -55°C to $+175^{\circ}\text{C}$, may be as low as ± 25 parts per million. Standard tolerance $\pm 1\%$. Tolerances down to $\pm 0.1\%$ on special order.

METOHM TYPE	MIL EQUIVALENT	RATED WATTS	OHMIC VALUES		MAX. VOLTAGE RATING
			MIN.	MAX.	
WL 60	RN 60	$\frac{1}{8}$	30	500K	250 V.
WL 65	RN 65	$\frac{1}{4}$	50	1 meg.	300 V.
WL 70	RN 70	$\frac{1}{2}$	50	1.5 meg.	350 V.

Write for complete specifications and a list of distributors. Ward Leonard Electric Co., 50 South Street, Mount Vernon, New York.

0-10



RESULT-ENGINEERED CONTROLS

WARD LEONARD ELECTRIC CO.

MOUNT VERNON
NEW YORK

RESISTORS • RHEOSTATS • RELAYS • CONTROLS • DIMMERS

For More Facts Write No. 212 on Information Card—Last Page

Products

Controller Maintains Correct Liquid Level



A simplified controller for maintaining correct liquid level measurements can be applied to almost any size or type of vessel. Using the Geiger-Mueller principle of radiation detection, controller has sensing heads in thick steel tubes to meet explosion-proofing requirements. It can also be used as radiation monitor for industrial areas. Without moving parts, instrument is installed so there is no contact with material being measured, hence no clogging of either material or instrument. Thermal stability is between minus 60F and 150F. **The Ohmart Corp., 4241 Allendorf Dr., Cincinnati 9, Ohio.**

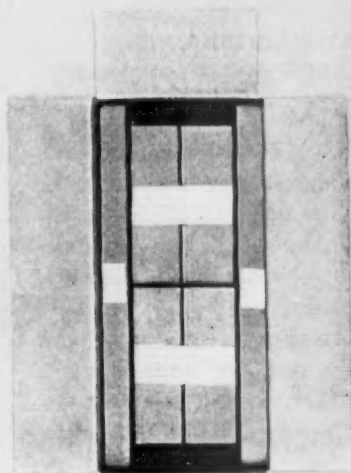
Write No. 23 on Information Card—Last Page

Wide Variety Provided In Thin Wall Tubing

An expanded line of thin wall welded tubing is manufactured in more than 80 grades of corrosion and heat resisting stainless steels, precipitation hardening stainless steels, high temperature alloys, low alloy steels, reactive alloys, etc., as well as newer specialized metals such as zirconium, titanium, etc. Tubing is made in wall thicknesses of 0.125 in. down to 0.005 in., diameters from $\frac{1}{4}$ in. through 36 in. and upward, and lengths up to 30 ft. Tubing is produced in square, hexagonal, rectangular, and flat oval shapes, as well as round. **The Carpenter Steel Co., Reading, Pa.**

Write No. 24 on Information Card—Last Page

ANOTHER REASON
FOR CHOOSING
OWENS-ILLINOIS
CORRUGATED BOXES



MR. STRONGBOX

LOCALIZED SERVICE FROM:

Atlanta, Ga.	Long Island City, N. Y.
Aurora, Ind.	Los Angeles, Calif.*
Bradford, Pa.	Madison, Ill.
Bristol, Pa.	Memphis, Tenn.
Chicago, Ill.	Mercedes, Texas
Dallas, Texas	Miami, Fla.
Detroit, Mich.	Milwaukee, Wis.
Flint, Mich.	Minneapolis, Minn.
Jacksonville, Fla.	Newark, N. J.
Kansas City, Mo.	Oakland, Calif.*
	Salisbury, N. C.

*These plants operated by
National Container Corporation
of California, subsidiary of Owens-Illinois.

How Owens-Illinois corrugated boxes protect "Project Mercury" voice carrier

Communication with the first U.S. astronaut in space was made through an electronic voice carrier which also kept track of his pulse and breathing. This device is so *ultradelicate* that the on-the-ground transporting of it posed a problem that was "out of this world."

Owens-Illinois designed the corrugated shipper above for the Project Mercury device and solved the problem. If you're looking for a safer, better way to protect and ship your product, no matter how fragile or delicate, get in touch with Owens-Illinois.

FOREST PRODUCTS DIVISION
FORMERLY NATIONAL CONTAINER

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

For More Facts Write No. 213 on Information Card—Last Page

If you have anything to do with plant *take a good look at*

**Chances are you can get better lubrication...
and save money in the bargain**

To many people grease is an unglamorous and confusing subject. This is a shame, because grease is really a spectacular sort of lubricant. Nevertheless, people who don't understand it tend to forget it.

As a result, they run into all sorts of trouble. Sometimes they spend too much, buy the wrong thing, or misapply what they do buy. Sometimes they neglect to apply it at all.

True, a few years back, greases could be a headache, principally because in many cases the "right" grease simply didn't exist. To handle some of the tougher jobs grease-makers came up with the weirdest sort of concoctions. No wonder people put grease in the product-to-be-forgotten class.

But times have changed.

Grease-makers have found out a lot. They're making *better* products . . . and Sun's among the leaders in producing a full line of modern maintenance greases.

WHAT IS A GREASE?

It always pays to be sure you know what you're talking about. At least, asking such an academic question may bring to light some worthwhile points you've forgotten. Simply, a grease is a thickened oil.

By his choice of thickener, a grease-maker can make a grease with high resistance to water, to high temperatures, or to both. By using additives and inhibitors he can get certain special properties, such as tackiness, high resistance to deterioration, and so on.

You might think of the thickener as a sponge that sops up oil, thus providing a means of keeping an oil *on the job*.

Greases come into their own wherever it's hard to keep oil where it belongs, or where it's impracticable to keep replacing oil that runs away.

You can't make a good grease with crankcase drainings. You must *start* with a very carefully chosen high-quality oil. The better oil makes the better grease.

WHAT MAINTENANCE GREASES ARE AVAILABLE?

There are several principal types: The work horses, made with calcium and sodium soaps, and the glamour greases, usually made with lithium soaps, and sometimes with other soaps or other kinds of thickeners.

Most greases come in several consistencies, or "thicknesses". How they stack up is best explained in the simple chart below.

WHAT ABOUT A SINGLE MULTIPURPOSE GREASE?

Despite what you may have been told, there is no such product. That is, there is no *single* consistency of a *single* type of grease that can handle *every* operating condition. This is the unvarnished truth.

		Handle Water?	OK For High Temperatures?	What Speeds & Loads?	Relative Cost
THE WORK HORSES	Calcium Soap Grease	YES	NO	ANY	LOW
	Sodium Soap Grease	NO	YES	ANY	LOW
THE GLAMOUR GREASES	Lithium Soap Greases & Others	YES	YES	ANY	HIGH

lubrication . . .

what's happened to grease

HOW TO MAKE UP YOUR OWN MIND

You're in luck here. Modern grease-makers are just as eager as you are to cash in on simplicity. So they're cutting down the number of greases they offer, and this makes grease selection simpler for you.

You can start yourself on the way to grease modernization by asking yourself just a few easy questions:

What do I want the most?

- Good lubrication?
- The economy of simplification?
- The economy of low initial costs?
- Or some combination of these?

Of course you want good lubrication. And this is *always* available, because today, somebody, somewhere, has the grease that will stand up to whatever working conditions you've got to handle. The grease you need exists.

So now you're down to the remaining questions: Simplification?

Low initial cost? Or a combination? The chart at the bottom of this page tells the story.

HOW MUCH SIMPLIFICATION?

Sometimes you can simplify yourself into spending *more* money, not less. Just the same, most people buy too many greases.

Many plants can do quite well with a single maintenance grease. This is hard for many people to believe. But it can be done, economically, in an amazing number of plants. Yours may be one of these. Many plants, of course, need two or three greases, but rarely any more.

When you're simplifying, the trick's in knowing when to stop.

THE VITAL LAST STEP

Now . . . you need to go only one step farther: You need to find *products* that will handle *your* needs.

And you need *savvy*, to analyze your needs, to pick the best product mix, and to apply wisely the products you buy.

Again the answer's simple. Sun has the *products* and the *savvy*. If you're really interested in getting the most out of grease, your Sun man can help you. Call him. Put the challenge to him. Call him today and tell him that you want to talk grease.

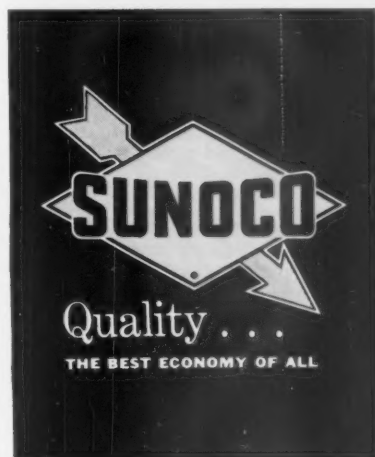
TECHNICAL BULLETIN

If you're not disposed to talk, then you should ask for Sun's new Technical Bulletin 69. It gives complete information on all of the basic types of maintenance greases in a comprehensive, orderly fashion, and lists full details on the major greases Sun makes.

For your copy write to:
SUN OIL COMPANY, Dept. PG-11.
1608 WALNUT STREET, PHILADELPHIA 3, PENNSYLVANIA.
In Canada: Sun Oil Company Limited, Toronto and Montreal. Or call the Sun representative located nearest you.



	Relative Grease Costs	Storage & Handling Costs	Chances of Failure Through Misapplication	REMARKS
Simplification?	HIGH	LOW	LOWEST	Usually, you'll need a glamour grease or two, and this will increase grease costs. This is not necessarily true in plants with narrow ranges of operating conditions or where you don't need one grease to handle, for example, high temperatures and water. In these cases you can often achieve simplicity by using one or two modern calcium or sodium greases in place of half a dozen.
Low initial costs?	LOW	HIGH	HIGHEST	When you have no condition that requires glamour greases, you can use moderate-cost calcium and sodium greases. This keeps grease costs down, but they can be overbalanced by higher storage and handling costs. Failures from misapplication are also more likely.
Combination of simplification and low initial cost?	MODERATE	MODERATE	MODERATE	Just about always the best solution. The bigger the plant, the more varied the needs, the more important a compromise becomes. Of the three, this is the hardest course to chart; to follow it wisely, expert advice is a must.





Custom molded by CMPC

APPLICATION: Outside case, battery case and send-receive knob molded for Globe Electronics 'Pocketphone' 2-way radio.

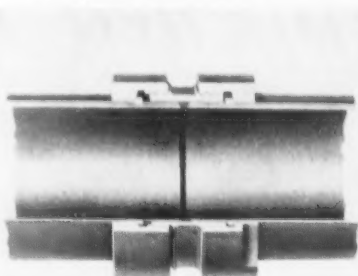
ADVANTAGES: The CMPC-developed method of molding ABS contributed greatly to the successful engineering and sales of the 'Pocketphone'. A special plastic was needed, combining thinness with impact strength, a desirable luster, and low cost. ABS suited the requirements as expertly handled by Chicago Molded engineers. Specify CMPC—custom plastic molders for over 40 years.

**CMPC CHICAGO MOLDED
PRODUCTS CORPORATION**

1020-J N. KOLMAR AVE. CHICAGO 51, ILLINOIS

Products

Low Cost Coupling Is Easy to Install



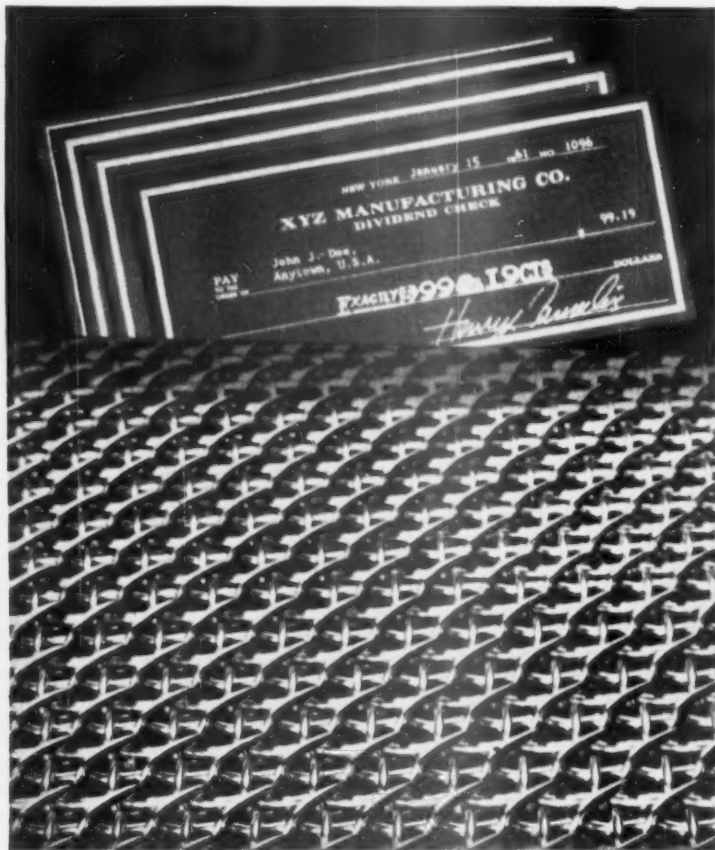
A CIP-approved coupling is low in first cost and designed for minimum installation expense. It may be used with metal and plastic pipe, tubing and fittings. Coupling provides straight-through, unrestricted flow; is a union in itself; puts only a gasket of approved material in contact with fluid; requires only one low-cost tool for installation. Leak-proof device

consists of cylindrical connector piece into which pipe, tube or fitting ends fit, which acts as bearing surface and assures proper alignment. Standard size range is 1/2 through 6 in. pipe and tube sizes. **Valve & Fitting Div., Cooper Alloy Corp., Hillside, N. J.** Write No. 25 on Information Card—Last Page

Ink Withstands Very High Temperatures

Heat-resisting ink able to withstand temperatures up to 2500 F, is designed specifically for use as identification marks on steel, copper, brass and on welding rods. Uses include such applications as identification marking on welding rods in order to insure proper weld for specific type of steel or marking on heat treated steel, copper and brass that will designate specifications number or other data and will not rub off under high temperatures. Ink is marketed in 1 to 55 gal. drums. **F. G. Okie, Inc., Amber, Pa.**

Write No. 26 on Information Card—Last Page



How to save money and make a better product

The batch method of processing is old fashioned, slow and often unduly expensive. By automating your operation with a woven wire conveyor, you can increase production... reduce costs... and turn out products of consistently uniform quality.

CF&I designs and manufactures Wissco Woven Wire Belts for virtually every process-conveying operation. The metal fabric resists heat, corrosion and abrasion, while the open mesh permits free, unvaried circulation of air, liquids or gases around all sides of the product.

0100

The Colorado Fuel and Iron Corporation
Denver • Oakland • New York
Sales Offices in All Key Cities



For More Facts Write No. 215 on Information Card—Last Page



9 A.M.—RUSH CALL. OEM CUSTOMER OUT OF BEARINGS

In 4 hours, BCA personal service had emergency supply on the way!

The frantic call came from an OEM customer. His normal bearings inventory had vanished under a rush order. Production was screaming for bearings. How fast could we deliver?

In just four hours, a two-day emergency supply of bearings was packed and on its way by air. At the same time, an additional five-day supply was being loaded for truck shipment to the customer.

Personal service like this is not unusual at BCA, though we much prefer orders placed in the normal fashion. Because we're flexible in operation, we're able to eliminate red tape and wasted time. This is good for us, and even better for our customers. And this is true not only for delivery,

but for engineering and production operations, too.

In addition, BCA offers complete research and engineering facilities and equipment, including specially designed machines for testing bearings, often under conditions identical to customers' actual operating conditions.

We make ball bearings for OEM and replacement use, in a complete range of types and sizes, for almost every industry . . . automotive, machine tool, construction, agriculture, and others. For complete information or technical assistance on bearings problems, contact Bearings Company of America, Division of Federal-Mogul-Bower Bearings, Inc., Lancaster, Pa.



**BEARINGS COMPANY
OF AMERICA**

**ball
bearings**

DIVISION OF
FEDERAL-MOGUL-BOWER
BEARINGS, INC.

that's packaging!



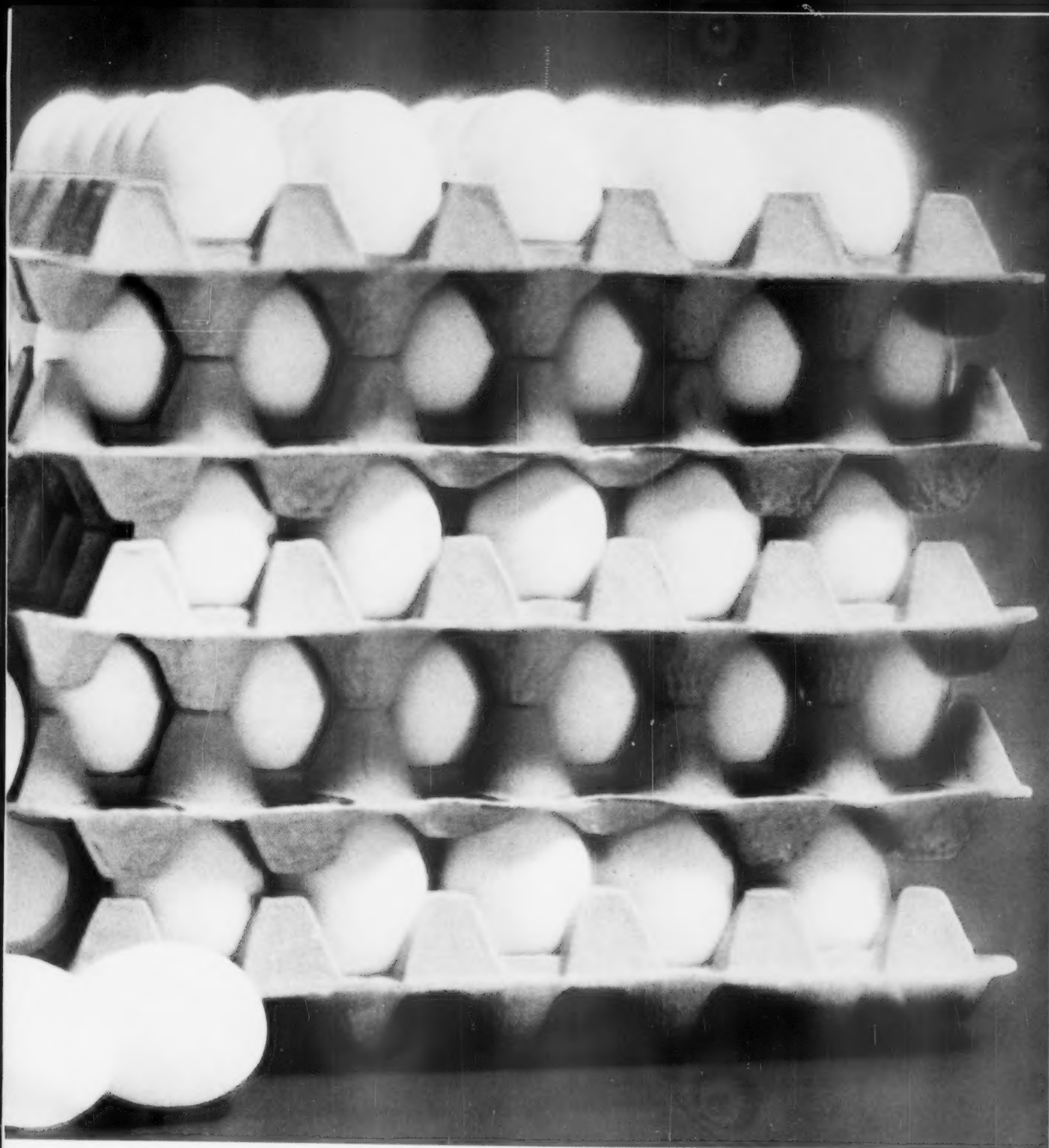
8 billion eggs a year—in bulk cases or retail cartons—go to market in packaging produced by Packaging Corporation of America, a new name in American business with half a century of packaging know-how. A nationwide sales organization—52 strategically located plants.

Packaging Corporation—a completely integrated



nationwide organization with 9 mills, 18 paperboard machines, 43 converting plants producing—

CARTONS • CONTAINERS • DISPLAYS • EGG PACKAGING PRODUCTS • MOLDED PULP PRODUCTS • PAPERBOARD • PLASTICS

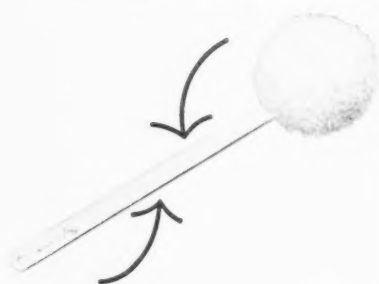


Shown: Mapes molded pulp Filler-Flats for bulk egg packaging

Packaging

Corporation of America

Mop handle has built-in germ fighter



Custom molded by CMPC

APPLICATION: A one-piece, flexible mop handle with a built-in inhibitor of bacteria, odor causing germs and mildew.

ADVANTAGES: Here was another challenge met squarely by CMPC . . . build-in a germ fighter as an important sales-building feature. Polypropylene and a proven-effective bacteria fighter were combined and injection molded into "Kleen-Puff" © mop handles. Strong, yet lightweight and flexible—they offer healthful protection for a year and longer. Specify CMPC . . . custom plastic molders for over 40 years.

CMPC CHICAGO MOLDED PRODUCTS CORPORATION
1020-J N. KOLMAR AVE. CHICAGO 51, ILLINOIS

Products

Noise Protector Gives Safety and Comfort



A low-priced noise protector called the "Quiet Ear" is intended for greater worker safety and comfort in industry, heavy construction, etc. Lightweight (12 oz.) unit features special cup construction to provide improved noise reflection. Easily replaceable cushion and crown pads of polyvinyl chloride assure worker comfort when protector is worn for long periods, even if used

with hard hats and safety eye wear. Easily adjustable headband distributes tension evenly. **Safety Products Dept., Bausch & Lomb, Inc., Rochester 2, N. Y.**

Write No. 27 on Information Card—Last Page

Infra-Red Units Give High Heat, Easy Control

Gas-fired infra-red heaters for application on OEM equipment are an efficient source of high intensity, easily controlled heat for heating, drying, curing and baking. Burner converts fuel energy to infra-red radiation by burning gas on surface of ceramic mat that reaches temperature of 1600 F. Radiation from burner is primarily in 3 to 6 micron wavelength, easily absorbed by most common material. Single rayhead burner has rated input of 12,000 Btu/h, of which more than 50% of the energy is converted to infra-red radiation. Burner units come in a variety of configurations and outputs. **Perfection Div., Hupp Corp., 1135 Ivanhoe Rd., Cleveland, Ohio.**

Write No. 28 on Information Card—Last Page

Let SUN SHIP solve your machine problem

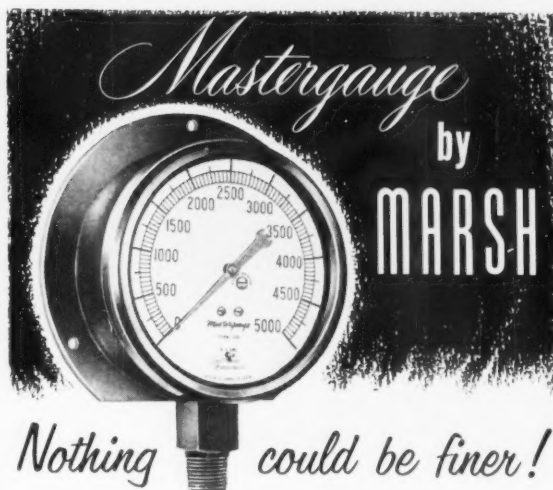
When you need machine work or specially built machinery of any kind, you'll find Sun Ship qualified to do the job exactly to your specifications. We have machine tools of every size, and the facilities and skills born of long experience.

When you have a machining problem, write or phone

SALES ENGINEERING DEPARTMENT

Sun SHIPBUILDING & DRY DOCK COMPANY
CHESTER, PA.

For More Facts Write No. 219 on Information Card—Last Page
120



Mastergauge alone brings you "Conoweld" leakproof, one-piece tube and socket; sturdier Marsh-alloy case; precision mastergauge movement; stainless tube and socket when required.

Mastergauge is standard bearer for the broad line of Marsh Gauges for every service.

In stock at your nearest Supply House

MARSH INSTRUMENT COMPANY

Division of Colorado Oil and Gas Corporation • Dept. G, Skokie, Ill., Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd St., Edmonton, Alberta • Houston Branch Plant, 1121 Rothwell St., Sect. 15, Houston, Texas • Eastern Seaboard Warehouse: Marsh Instrument Company, 1209 Anderson Ave., Fort Lee, N.J.



Write for catalog


For More Facts Write No. 218 on Information Card—Last Page
PURCHASING



**Cities Service
fits right in
with their
plans!**

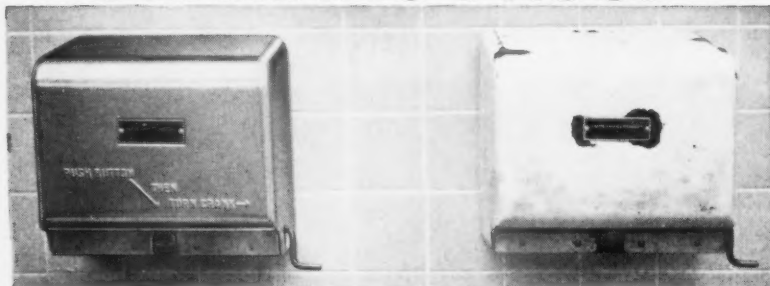
NU-ERA MANUFACTURING COMPANY, New Bedford, Mass.

There's a bright future ahead for Nu-Era, manufacturer of replacement gears. The firm recently built this huge plant to handle increased orders... and Cities Service definitely fits in with their plans. Says General Manager Bill Rebone, "At first, all cutting oil brands seemed to be the same. However, we soon realized that Cities Service oils were giving us superior performance in every respect. Most of our gears are made of #5135 steel, a real tough customer to work with. Yet, we find we're getting long tool life, extra clean cuts with Cities Service Chillo 30 Cutting Oil." Nu-Era now relies, exclusively, on Cities Service for their metal machining fluids. Find out how Cities Service can fit in with your plans. Simply contact your nearest Cities Service office or write: Cities Service Oil Company, 60 Wall Street, N.Y. 5, N.Y.

CITIES  SERVICE

Out Front in Quality... Out Front in Service, too!

DRAMATIC PROOF



Turn-Towl's aluminum cabinet wears while others just wear out

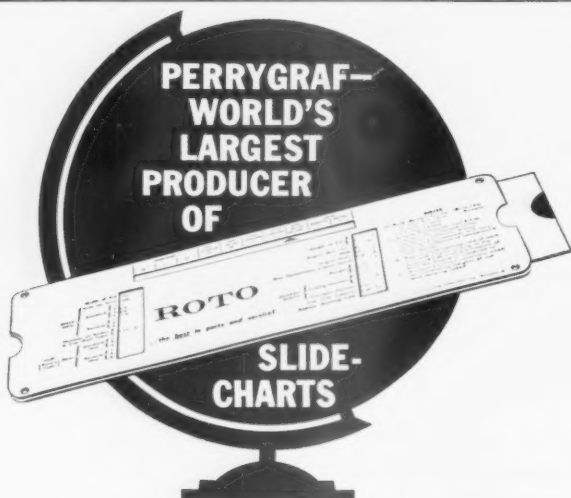
Turn-Towl put its own cabinets to the test in the slaughter room of a midwestern meat packing plant. First, the familiar white enamel towel cabinet (like those supplied by most paper towel services) was used a year. Then Turn-Towl's polished aluminum cabinet replaced it — looked just as new 18 months later when it was taken down and photographed.

Other equally dramatic field tests have been made in schools, chemical plants, hospitals. Names are available on request.

For the name of your nearest distributor — who will demonstrate Mosinee Turn-Towl service and arrange for a free trial, if you wish — write Dept 1100.



For More Facts Write No. 221 on Information Card—Last Page



Two hundred million since 1932! More Slide-Charts for more people than any other company in the world.

Two Modern Plants, one geared to runs of millions, the other to hundreds. **Finest facilities** for accurate printing and assembly. **Deliveries** as high (in a pinch) as a million per week. **Prices** consistent with quality work and dependent on quantity and materials from pennies to dollars.

We invite your inquiry. Send for free full color booklet including 122 actual case histories.



product facts at the fingertips

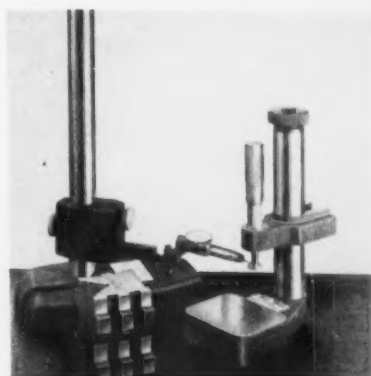
150-I S. Barrington Ave., L. A. 49, Calif.

1500-I Madison St., Maywood, Ill.

For More Facts Write No. 222 on Information Card—Last Page

Products

Economy Instrument Line Has Wide Application



Height-setting, measuring and comparing instruments in an economy line are furnished with a one-inch micrometer head, a one-inch dial indicator or a half-inch dial indicator. Units with one-inch head can be used for setting heights from zero to 5 in., using tool base as working surface, and from zero to 6 in. using surface plate as zero point. Micrometer head has slant-line graduations and reads in .001 in. Second model is equipped with one-inch dial indicator mounted in yoke with graduations in .001 in. and readings from 0 to 100. Third unit provides readings in ten-thousandths of an inch on ½ in. range dial indicator which has two count hands. **Browne & Sharpe Mfg. Co., Ind. Products Div., Providence 1, R. I.**

Write No. 29 on Information Card—Last Page



"Pipe sweaters? . . . Don't you mean pipe insulation?"



STRAPPING TAPE, available in
a full range of tensile and impact
strengths, applied with a versatile
STRAP-IT® dispenser. For carton sealing,
bundling, palletizing, reinforcing
... whatever the packaging application.

PERMACEL®

NEW BRUNSWICK, NEW JERSEY • TAPES • ELECTRICAL INSULATING MATERIALS • ADHESIVES

—that's **WALWORTH DUCTILE IRON VALVES!** Walworth's special* ductile iron alloy offers steel-like strength and toughness. That's why these valves are practically "shatterproof"—with exclusive Walworth Valve quality for good measure! ■ Think of **WALWORTH DUCTILE IRON VALVES** wherever your valves face unusual flexing conditions—and where economy is a consideration.

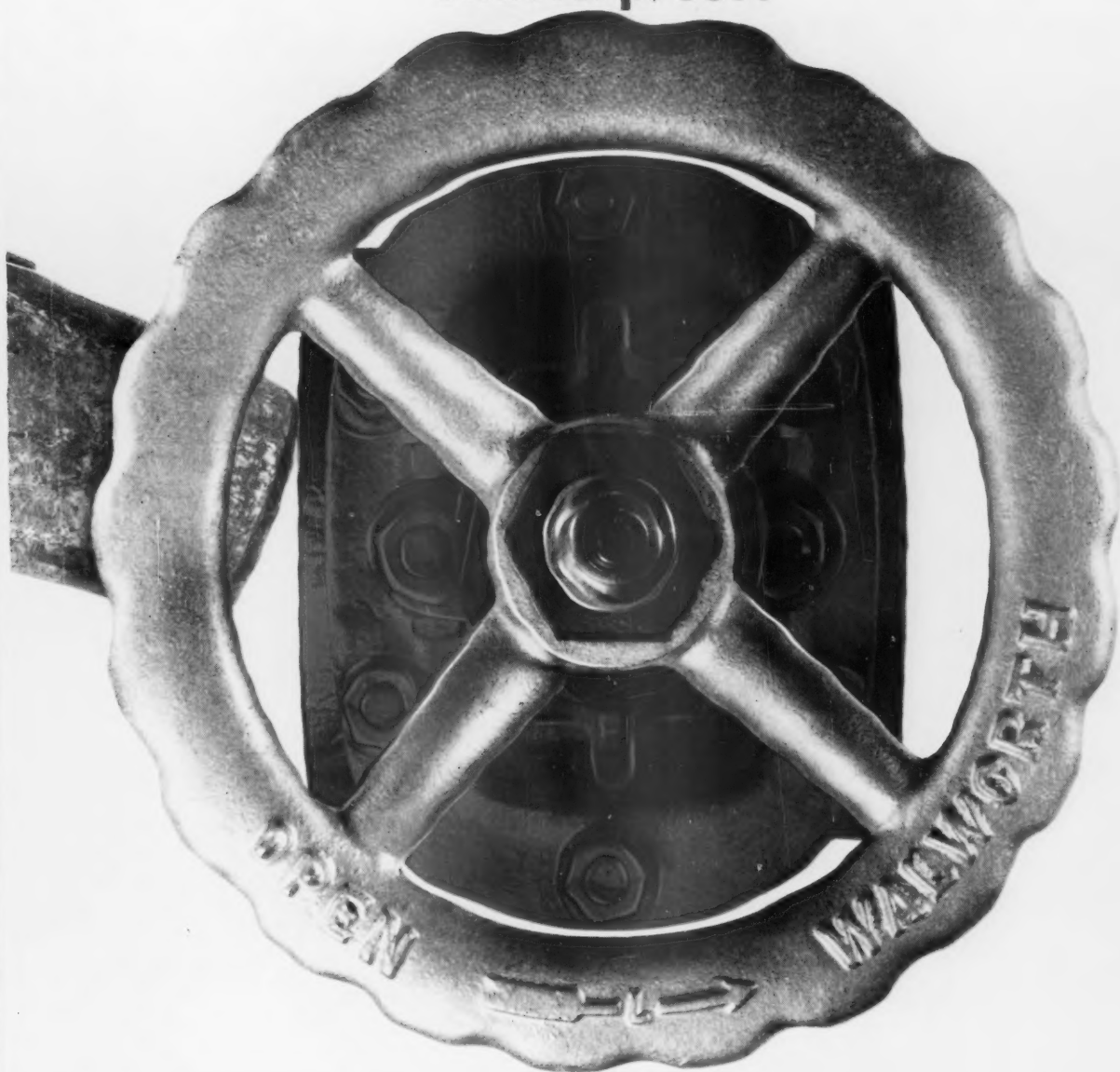


WALWORTH DUCTILE IRON VALVES are now available in gate, globe, check and angle types...2"-24"...in ASA 150 and 300 lb. classes. See your Walworth distributor, or write Walworth Company, 750 Third Ave., New York 17, N.Y.

WALWORTH 

the Walworth companies: Alloy Steel Products Co. • Conoflow Corp. • Grove Valve & Regulator Co. • M&H Valve and Fittings Co.

Shatterproof!



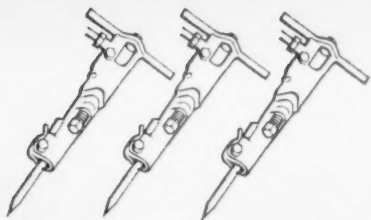
*Walworth specifies minimum elongation of 18%

For More Facts Write No. 224 on Information Card—Last Page

The Porter Alloyist delivers the right alloy
IN THE SPOTS THAT COUNT



For More Facts Write No. 225 on Information Card—Last Page

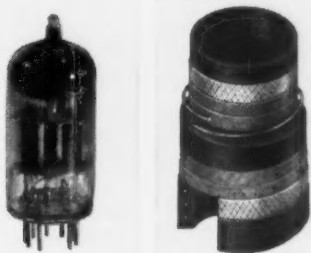


There can be no compromise in metals for those tougher, tool-killing jobs. That's why the Porter Alloyist recommends Grade D phosphor bronze for the rifle nut in air hammers . . . the critical part of the tool that absorbs hundreds of vibrations a minute at high impact pressure. Produced at a special temper, this alloy has the required toughness and durability to do the job and to help keep tool maintenance costs low.

THE PORTER ALLOYIST IS A SPECIALIST IN A WIDE RANGE OF SPECIAL METALS

Porter's Riverside-Alloy Metal Division is your single reliable source for specialty alloys in 8 basic groups of wire, rod and strip . . . phosphor bronze, nickel silver, cupro nickel, brass, stainless steel, nickel, Monel and Inconel.

Ask for a free copy of "Alloys for Industry" describing our wide range of specialty alloys. Write H. K. Porter Company, Inc., Riverside-Alloy Metal Division, Riverside, N.J. Or contact our sales offices in Hartford, Chicago, East Orange, Atlanta, Cleveland, Detroit, Cincinnati, Los Angeles and Rochester.



PORTER nickel wire is used extensively in vacuum tubes and in other components for the electronics industry.

PORTER carbon steel wire reinforces hose for air hammers and other industrial equipment.

PORTER

RIVERSIDE-ALLOY METAL DIVISION
H. K. PORTER COMPANY, INC.

Products

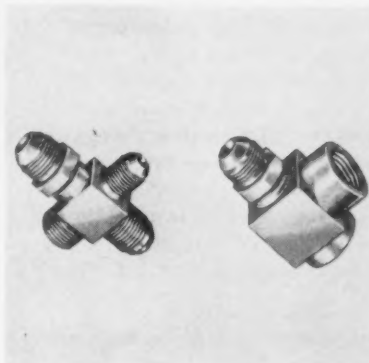
Hole Saw Cuts Clean and Fast



A line of hole saws is designed for accurate, efficient cutting of holes in any machinable material up to 1 1/8 in. thick. Intended for portable tools, drill presses, lathes, boring mills and milling machines, saws offer fast, clean-cutting, shatterproof strength and easy core removal. Special high speed steel cutting edge keeps saw sharp for exceptionally long periods. Knock-out slots make removal of cores fast and easy. Saws come in full range of hole sizes from 9/16 to 6 in. and in mandrel sizes for light to heavy cutting. **Simonds Saw and Steel Co., Fitchburg, Mass.**

Write No. 30 on Information Card—Last Page

Manifold Fittings Stress Building Block Concept



A line of hydraulic fittings permits custom assembly of hydraulic manifolds from standard components. Fitting comes in three basic shapes, cross, tee and elbow. Eleven sizes range from

1/8 in. to 2 in. Each fitting is equipped with standard female part (straight thread port with coinable, metal-to-metal seat) on one end and male swivel head fitting opposite. This makes it possible to screw a series of fittings together to form a manifold. In addition, each fitting has variety of tube and hose outlet fittings to permit piping into and out of manifold. Building block concept of manifold design eliminates manifold machining and provides great design flexibility. **Flodar Corp., 16911 St. Clair Ave., Cleveland 10, Ohio.**

Write No. 31 on Information Card—Last Page

Silicone Rubber Foam Cures at Room Temp.



A low density, silicone rubber foam that cures at room temperature will have applications in thermal and vibration insulations, cushioning and sealing. Product is supplied as low viscosity fluid. Addition of a catalyst produces the foam. Reaction proceeds to completion (a seven-fold volume increase) in four to five minutes at room temperature. When allowed to expand with restraint, compound produces a foam with 10% closed cell structure and a density of 10 lbs per cu ft, serviceable from minus 70 to 500 F and with good electrical properties. Catalyzed fluid pours easily before foaming action is complete, and it can be substituted for fabricated sponge in difficult applications. "Pour-it" feature makes it possible to produce various shapes and parts using molds of cardboard or aluminum foil. **Dow Corning Corp., Midland, Mich.**

Write No. 32 on Information Card—Last Page



CLAIMS REVISITED

Most informed buyers know that, despite all the drum beating about brand superiority in metal cutting products, all of the several top brands are amazingly close in both price and quality.

We frankly admit that Clemson Star is no exception, and therefore refuse to guarantee that Star products, though high in quality, are "cleaner cutting," "far more efficient," or "longer lasting," than all others on the market. Nor will we make any wild claims about our service or delivery being more complete or expedient than that of our most conscientious competitor. What we *do* say — and *guarantee* — is that every Star product you purchase from your local Clemson Star distributor will do *exactly* what he and we say it will do. That it will come to you at a fair price, as promptly as possible, and with the solid backing of an old, established and reputable American company, goes without saying.

The only thing that *may* be unique about Clemson Star is the absence of fantastic claims. And that's *policy*!



CLEMSON STAR

CLEMSON BROS., INC. • MIDDLETOWN, N. Y. • METAL CUTTING PRODUCTS

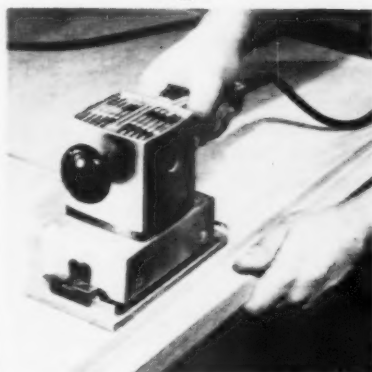


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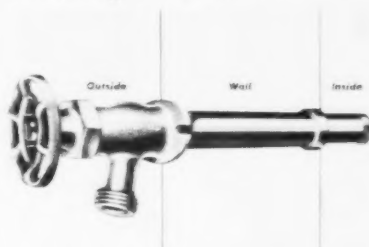
Products

Orbital Sander Is Fast and Light



A lightweight but rugged orbital sander is an ideally balanced, heavy-duty tool for high speed, satin-smooth finishing of wood, metal, plastics or plaster. Unit can be used on flat, vertical or overhead surfaces, sands right up to vertical edges and corners, and leaves no swirl marks. It is powered by 115 volt AC-DC (over-size) motor as standard, with 230 volts available. Direct-drive action, with no belts or gears to wear or be replaced. Orbit diameter is $\frac{1}{8}$ in., with 10,000 orbits per minute. Weight is only 5 lbs., and tool is just $5\frac{3}{4}$ in. high x $3\frac{5}{8}$ in. wide x $10\frac{3}{4}$ in. long. Milwaukee Electric Tool Corp., 5306 W. State St., Milwaukee 8, Wisc. Write No. 33 on Information Card—Last Page

Outside Faucet Ends Freezing Problem



A frost-proof faucet which is installed and works just like any other outside water shutoff eliminates winter freezing and bursting. By means of extension tube and valve seat, it shuts off water inside building where it is warm. No water reaches freezing zone. There is no need to turn off and (Please turn to page 132)



DC's got what it takes to ship it!

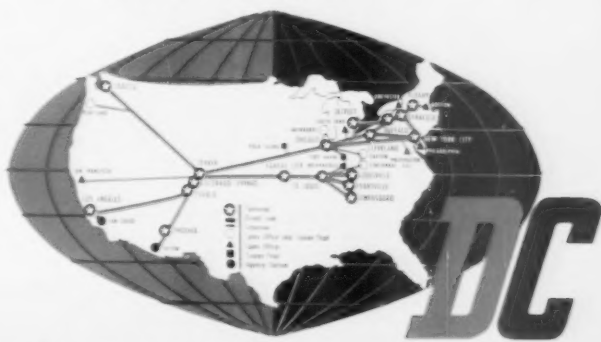
If moving *your* freight calls for specialized equipment, DC's got it: the right kind, in the right place, at the right time! DC's "top drawer" \$18 million fleet includes four basic over-the-road trailers... the type and number of pickup and delivery units required in

each terminal city. Specialized equipment is one key to safe, speedy handling... and DC's got it!

DENVER CHICAGO TRUCKING CO., INC.



*the ONLY
direct coast-to-coast
carrier!*



A MULTI-MILLION DOLLAR INVENTORY

*... yours on a moment's notice,
without a cent of cost before!*

Your Steel Service Center offers Republic steel products as near and as quick as picking up your phone . . . materials with pre-delivery processing *done to your order* . . . delivered in your plant *when they're needed*. That's as good as inventory, any day.

Count it as "inventory on hand" . . . and eliminate the too-familiar "costs of possession." No drain on your resources . . . no need to purchase in anticipation of needs that may be weeks away . . . no dollars frozen in inventory . . . no tied-up warehouse space.

In addition, your Steel Service Center offering Republic products can arrange for Republic metallurgical assistance.

You are close to a Steel Service Center, too. With 1,300 centers across the country, that's certain. If you're not already doing business with one, pick up the 'phone and find out about the multi-million dollar asset you didn't know you had!

<p>SOME OF THE MANY REPUBLIC STEEL PRODUCTS . . . AND PRE-PROCESSING SERVICES OFFERED BY YOUR STEEL SERVICE CENTER . . .</p>	<p>In steel: carbon, alloy, stainless, high strength; sheets, strip, bars, plates, pipe, tubing, wire, rods.</p> <p>Cutting, shearing, flame-cutting, sawing, coil slitting, and grinding.</p>
--	--



REPUBLIC STEEL

Cleveland 1, Ohio

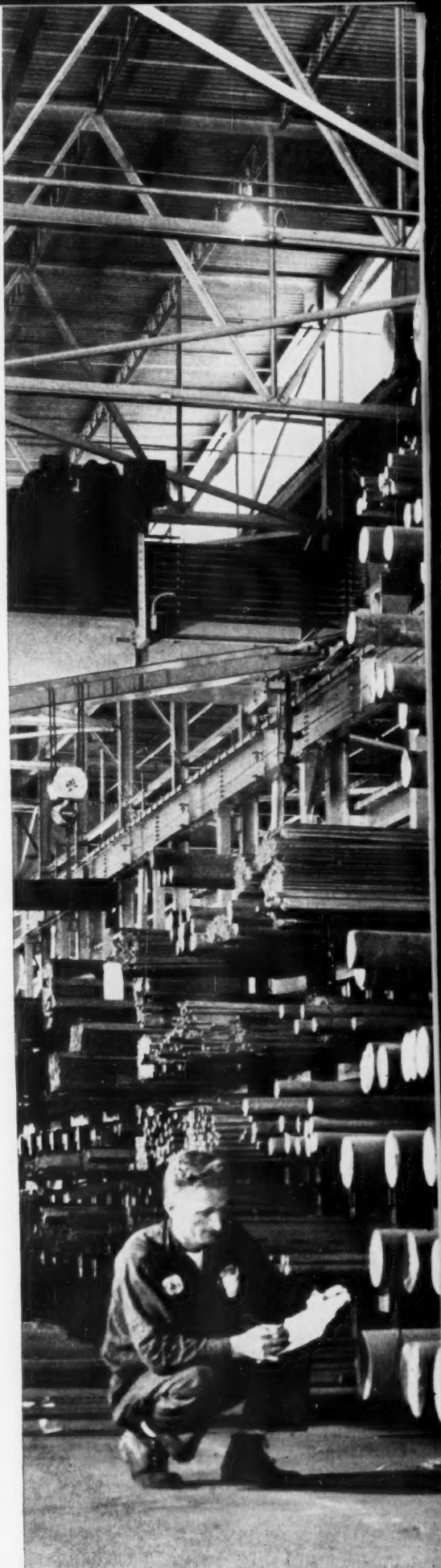
REPUBLIC HAS THE FEEL FOR MODERN STEEL

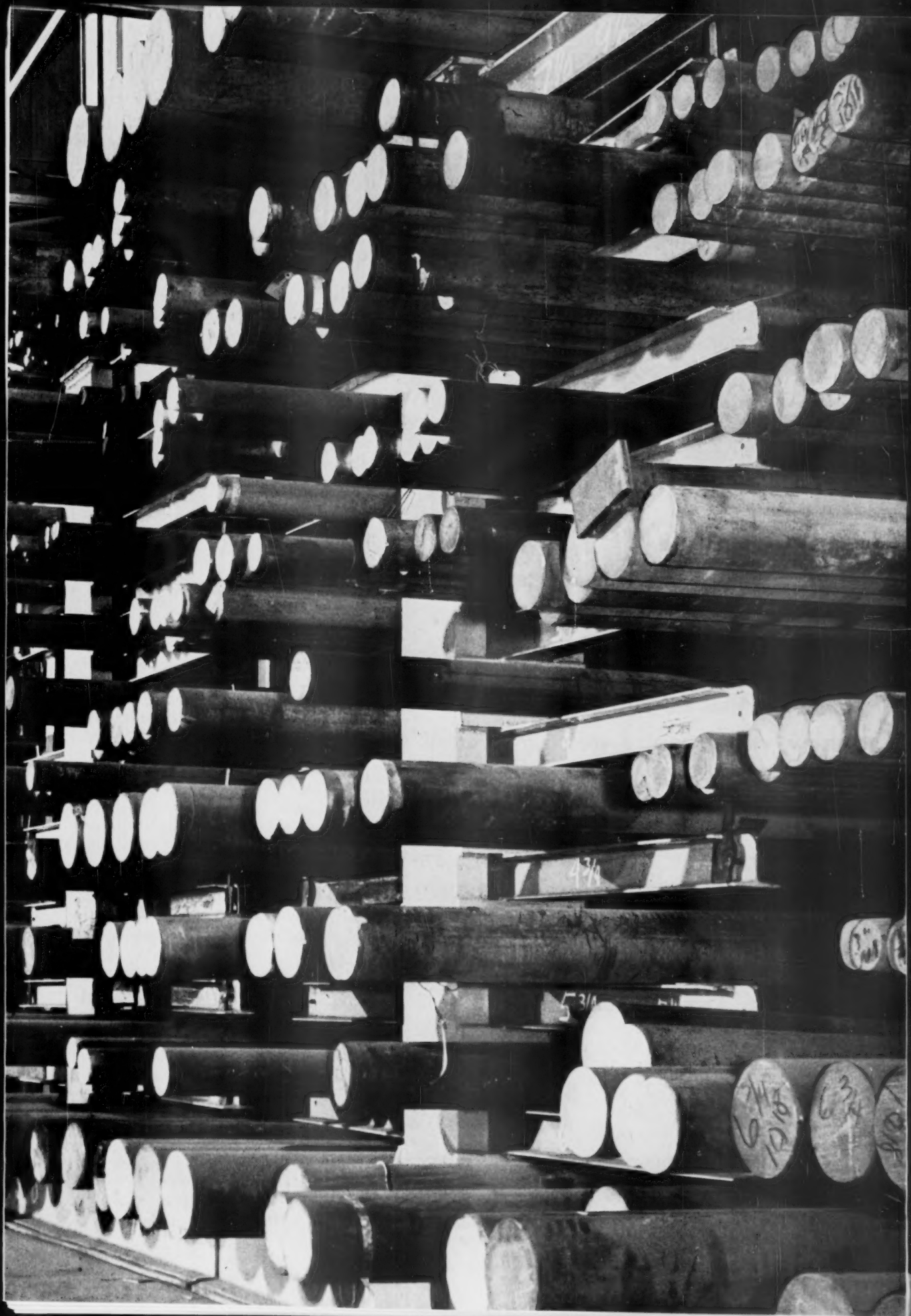


Strong, Modern, Dependable



For More Facts Write No. 228 on Information Card—Last Page





BETTER WELDING WITH ARCOS SERVICE



Know what you're getting—know what you're going to get. The combination of Arcos quality filler metals and Arcos technical assistance brings you *predictable* welding results you can depend on time after time—job after job. The skills of the Arcos research and service team are available to help solve your problems—to give you top performance on every welding job. You can add quality to your welding and save money by consulting your Arcos representative.



ARCOS

Arcos Corporation • 1500 S. 50th St. • Philadelphia 43, Pa.

For More Facts Write No. 229 on Information Card—Last Page

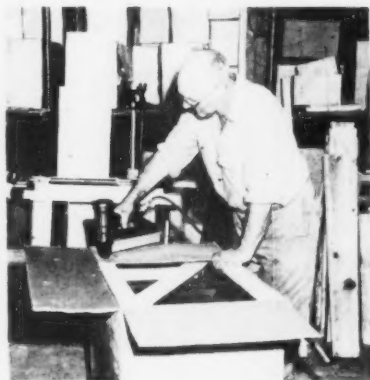
Products

(Continued from page 128)

drain outside sill cocks and lines during winter. Water is always available for emergency use, and need for inside cutoff valves is eliminated. Faucets are available in 4, 6, 8, 10, 12, 14, 16 and 18 in. lengths. **Mansfield Sanitary, Inc., Perrysville, Ohio.**

Write No. 34 on Information Card—Last Page

Staple Nailer Fastens Corrugated To Wood



A staple nailer which drives 16 gauge staples with a 1 in. wide crown, in lengths from 21 32 in. to 1 1/4 in. long is especially suited for fastening corrugated box material to wood. Extra-wide crown eliminates need for a nail/washer type of fastening. Extra width insures that corrugated stock will not pull through staple. Tool is made mostly of magnesium and weighs only six lbs. Touch-trip trigger mechanism reduces worker fatigue and speeds up work. Tool may be operated on as little as 50 psi. **Fastener Corp., 3702 River Road, Franklin Park, Ill.**

Write No. 35 on Information Card—Last Page

Titanium Carbide Is All-Purpose Cutting Tool

A recent development which permits titanium carbide cutting tool tips to be brazed to steel shanks permits use in wider range of machining applications. Previously the bonding agent would often break loose when overheated under pressure of heavy cuts. Now titanium carbide may provide the answer for those who want an all-purpose machining

(Please turn to page 136)

ONE STANDARD SCREW REPLACES MOST THREAD-CUTTING AND THREAD-FORMING SCREWS



Patent
applied for

NEW



TAPPING SCREW

with **LOW** drive torque...

HIGH strip torque

Square point provides 4 points of contact • Starts straighter • Offers chip-free driving • Low drive torque with high strip torque • Resists vibration... won't loosen • Uses same lead hole • Replaces most types of thread-cutting and thread-forming screws... simplifies inventory... assures better price break.

Available in standard head styles, finishes and sizes... for unlimited applications • Compare features, tests, advantages and prices...

You'll buy TYPE "S" tapping screws!

Write for complete information.



NATIONAL LOCK

INDUSTRIAL HARDWARE DIVISION • NATIONAL LOCK COMPANY • ROCKFORD, ILLINOIS

International Division • 13 E. 40th St. New York, N.Y. • Cable: ARLAB

CABINET HARDWARE • LOCKS • PLASTICS • FASTENERS • APPLIANCE HARDWARE... ALL FROM ONE SOURCE

For More Facts Write No. 230 on Information Card—Last Page

"We had 18-20 hours downtime every time we changed heats. With strip, we just hook on from heat to heat. No downtime."

"With strip we use smaller blanks to produce the same part."

"By using strip we save downtime, die repairs."

"Rejects have dropped from about 8% to less than 1%."

"We found we couldn't afford the low cost of sheet."

Read why Target Stamped Products, Inc., Kinsman, Ohio, switched from strip to sheet—and then back to strip. Comments are Harvey Haynam's, Target's president:



"We thought we'd give sheet a try back in 1958. The low cost looked too good to pass up. Today, you'd have a hard time finding a piece of cold rolled sheet around the shop.

"We were absorbing 18-20 hours of downtime every time we changed heats. With strip, we just hook on from heat to heat. The characteristics are the same from heat to heat and coil to coil. We don't waste time adjusting our dies.

"Strip saves us metal. We can use smaller blanks to produce the same part. I'd say we save from $\frac{1}{16}$ " to $\frac{3}{32}$ " of metal per part. That's a lot of steel when you're turning out 25-30 million parts a year.

"We don't have gauge problems now. The strip we buy is always rolled within our working toler-

ance. We work to a plus or minus .0025 inches.

"So far, strip hasn't given us lamination troubles. It doesn't take much lamination to give you big trouble in a deep drawing operation. When the metal separates, part may stick to the punch while part stays in the cavity. As another blank transfers to the same station, there's a double smash and the die is ruined. That hasn't happened with strip. Saves a lot of downtime and die repair.

"Strip takes a deep draw without thinning out on you. Its uniform temper pays off when you're turning out Silent Blocks where both the ID and OD have to be right or the part's a reject.

"All in all our rejects have dropped from about 8% to less than 1% since we switched back to strip.

This mark tells you a product is made of modern, dependable Steel.



Outer metal bushing of a Silent Block. Target Stamped Products turns out millions of these each year for the auto industry. Silent Blocks are used in the suspension systems of all American cars—about eight to a car. To produce the piece, Target must work to a plus or minus .0025" tolerance or the Silent Block won't work. When Target switched back to strip, their rejects dropped from about 8% to less than 1%.



"You can have all the automation in the world, but if you're using the wrong steel, it just nickels and dimes you to death. With strip our machines keep working; we need less supervision, less tool repair. Our trim is small and our percentage of rejects is the smallest we've ever known. We found out we couldn't afford the low cost of sheet. That's why we're back with strip."

The switch is back to strip

Cold rolled sheet steel can be your best buy on a cost per pound basis. Certainly its quality has risen sharply since the war. But, pound cost is only part of the story. If you really need steel tailored to your specific production requirements, cold rolled strip is the answer.

Strip is not sold on an as-rolled basis. What you buy is a specific chemistry, temper, dimension, edge and finish to precisely meet your fabricating and end-use requirements.

American Steel and Wire has over 12,000 mill practices in available strip specifications. Many of your processing steps may actually be eliminated by using cold rolled strip.

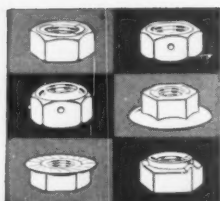
Take a hard look at your production line and let our salesmen look with you. Check your rejects, your downtime, your scrap rate. Perhaps you can improve the quality of your product and cut production costs at the same time, with *tailored-to-the-job* cold rolled strip from American Steel and Wire. American Steel and Wire Division, Rockefeller Building, Cleveland 13, Ohio. USS and American are registered trademarks



**American Steel and Wire
Division of
United States Steel**

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
Tennessee Coal and Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, New York, Distributors Abroad

One



of these

CAN IMPROVE YOUR
PRODUCT...

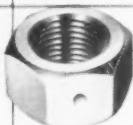
SIX GREAT MACLEAN-FOGG LOCK NUTS

MF UNI-TORQUE



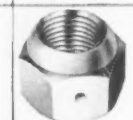
A free starter with lock at the top.
Withstands severe vibrations.
Cuts assembly time.

MF TWO-WAY



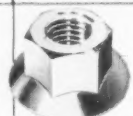
The Lock's in the center of nut.
Can be applied from either end.
Permits bolt end to be flush with,
or below, top of nut.

MF OPEN END CAP NUT



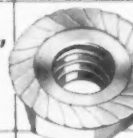
Has two-way center-of-nut lock.
Used on furniture, appliances,
toys, lawn mowers, tools, etc.

MF UNI-TORQUE FLANGE NUT



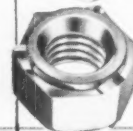
Combination lock nut and washer.
Use on oversized holes; where
extra bearing surface is needed.

MF "WHIZ-LOCK" FLANGE NUT



This one spins on. Serrations take
a firm grip on work. Break loose
torque higher than seated torque.

MF PILOT TYPE WELD NUT



You can have it with or without
lock. Simplifies assemblies by
means of self-locating pilot.

CIRCLE NUMBER FOR ILLUSTRATED CATALOG



MacLean-Fogg Lock Nut Company
5535 N. WOLCOTT AVENUE
CHICAGO 40, ILLINOIS

Need Lock Nut
Advice Now?
Phone ED 4-8420,
Collect.

For More Facts Write No. 231 on Information Card—Last Page

Products

(Continued from page 132)

cutting tool. It will work any material with ease and does not appear to be "speed sensitive." Titanium carbide cutting tips are more shock resistant than ceramic types, providing equal if not better finishes, especially on steel. They outperform conventional cemented carbides in high-speed finishing and can be used effectively at much lower speeds where conventional carbides begin to abrade and break up. **DeVlieg Machine Co., Microbore Division, Royal Oak, Mich.**

Write No. 36 on Information Card—Last Page

Machine Removes Nails From Scrap Lumber

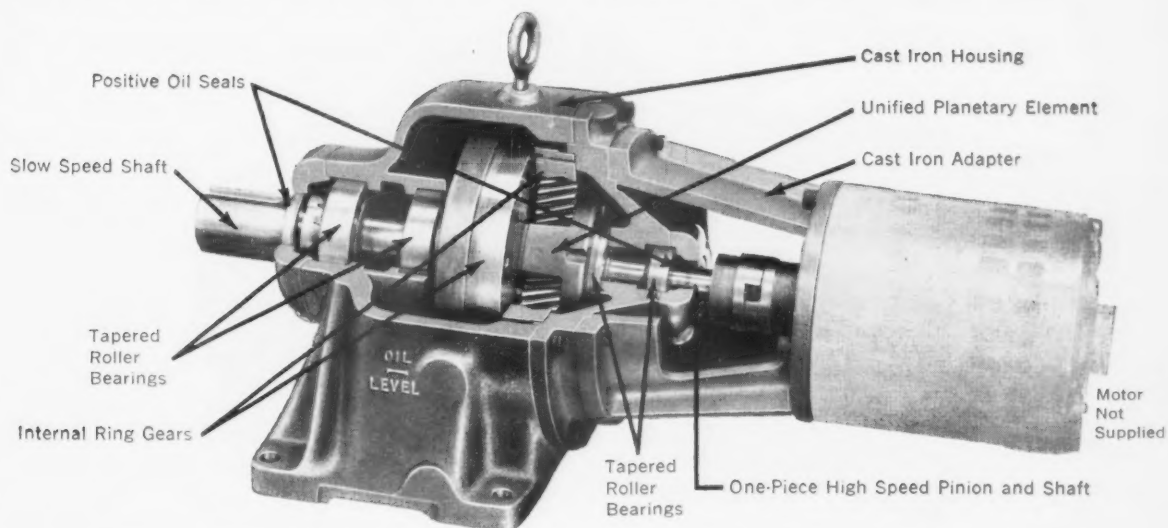


A nail removing machine makes it economical to salvage used lumber for use in packing boxes, crates, skids, etc. Unskilled operator can extract 800 nails per hour. Boards are simply slid across machine's surface. Rapid toggle action closes machine jaws on nail points or heads that project 1/4 in. or more and nails are pulled right through the wood. Action is so fast there is no splintering and original holes are barely enlarged. Unit removes nails up to 5/16 in. in diameter from boards as thick as 1 1/2 in. **Scrap Processing Co., P.O. Box 294, Downers Grove, Ill.**

Write No. 37 on Information Card—Last Page

Technical Procurement Data

HORIZONTAL MOTORIZED DIFFERENTIAL SPEED REDUCERS



CAST IRON HOUSING—designed for high heat radiation. One-piece construction, close-grained gray iron for maximum strength and rigidity.

UNIFIED PLANETARY ELEMENT—integral primary and secondary planetary gears, mounted in a ductile iron cage—for even wear, equalized load, smooth operation. Hardened and ground, alloy steel gears carry entire power transmission load.

CAST IRON ADAPTER—permits use of any standard "C" flange motor. Flexible coupling (optional) connects motor to input shaft which can be driven in either direction.

INTERNAL RING GEARS—primary and secondary. Cut from alloy steel, heat treated for wear resistance.

ONE-PIECE HIGH SPEED PINION AND SHAFT—machined from

alloy steel with teeth cut integral with the shaft. Hardened and accurately ground to close limits.

SLOW SPEED SHAFT—heat treated, precisely ground alloy steel. Low speed gear web of ductile iron.

TAPERED ROLLER BEARINGS—opposed pairs support the radial load, take thrust, ensure permanent alignment of both input and output shafts.

POSITIVE OIL SEALS—chevron type, keep oil in, dirt out. Oil and heat resistant, non-abrasive, low coefficient of friction.

AVAILABLE in any ratio from 1.1:1 to 50,000:1 without increasing the number of parts. Each model has a range of reduction ratios. Overall dimensions of individual models do not change regardless of ratio.

- 7 Models
- .12 to 81.51 H.P.
- Ratios 1.1:1 to 50,000:1
- Max. Output Torque
50 to 113,000 in. lbs.

Series HM Horizontal Motorized Speed Reducers are a part of the Winsmith Planetary Differential Reducer line. They feature cut-tooth helical gears of 15° helix angle for smooth, positive power transmission—greater load carrying capacity—larger reduction ratios in smaller, more compact units—minimum wear and long service life. Winsmith Horizontal Motorized Differential Reducers are easy and convenient to install, require no bedplate, deliver more horsepower per pound of weight and cubic foot of space, and permit easier integration with the driven machine.

Write today for complete information or call your nearest Winsmith Representative listed in the Yellow Pages. He is a technically trained expert who is always ready to help you with any speed reducer problem. For both standard and special power transmission applications, you'll find it pays to standardize on Winsmith.

WINSMITH, INC.

225 Eaton Street, Springville, (Erie County), New York



• • • Winsmith Speed Reducers are made by American craftsmen to meet American design and production standards.

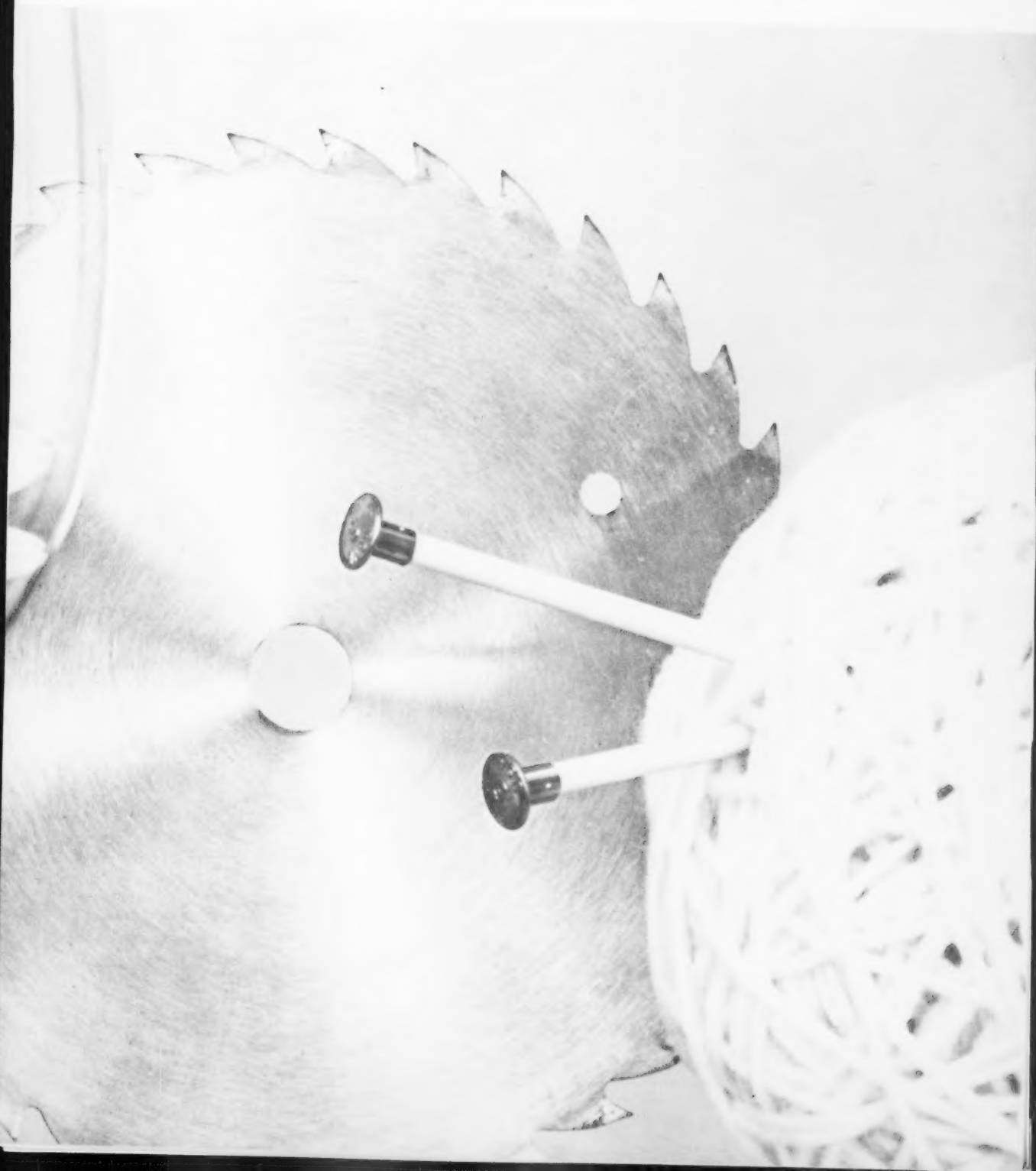
PPG Chemicals clarify
the sparkling world
of
white and clean



Bleaching, scouring, fluxing, degreasing . . . demanding industrial purifying jobs require active PPG Chemicals. Process and service industries have learned they can count on PPG Chemical Division as their long-term source of basic raw materials and processing aids. PPG Chemicals such as chlorine, hydrogen peroxide, calcium hypochlorite, caustic soda, soda ash, sodium chlorate and chlorinated solvents include extra values to make your operations smoother and more profitable: safer, faster shipments; technical service by experts, in your plants or in our fully-equipped labs; product research and modern plants to insure a steady flow of improved products in the volume you need. For extra value, make PPG Chemical Division your preferred supplier. Pittsburgh Plate Glass Company, Chemical Division, One Gateway Center, Pittsburgh 22, Pennsylvania. Offices in principal cities. In Canada: Standard Chemical Limited.



chemicals



In Every Important Industrial Center...



★ PLANTS
● DISTRICT OFFICES

There's a **WYCKOFF** SALES and SERVICE REPRESENTATIVE

READY TO SERVE
YOUR COLD FINISHED STEEL BAR REQUIREMENTS

Call him... he will be glad to work with you!

• District Offices

ALBUQUERQUE, N.M.

Paul R. Spencer Co., Inc.—Phone: 243-6875

AMERICUS, GA.

T. G. Walker—Phone: 3579

BOSTON, MASS.

R. B. Butler
Phone: (Putnam, Conn.) Walnut 8-2754

BUFFALO, N. Y.

J. E. Allen—Phone: NF 3-6400

CEDAR RAPIDS, IOWA

A. W. Eastin—Phone: Empire 5-2388

CHICAGO, ILL.

E. C. Rock—Phone: Bishop 7-6700

CLEVELAND, OHIO

C. B. Thoburn—Phone: Main 1-8662

DAYTON, OHIO

R. P. Cornell—Phone: BA 3-6571

DENVER, COLO.

Paul R. Spencer Co., Inc.
Phone: Keystone 4-3293

DETROIT, MICH.

E. C. Koester—Phone: Trinity 2-2002

FARGO, N. D.

E. H. Thompson—Phone: 2-6493

FORT WORTH, TEXAS

C. A. Fischer—Phone: Edison 2-6402 or 2-5435

GREENSBORO, N. C.

K. O. Brown & Co.—Phone: Broadway 3-5973

HARTFORD, CONN.

Lane Johnston
Phone: (Putnam, Conn.) Walnut 8-2754

HOUSTON, TEXAS

Harry W. Renick, Jr.—Phone: Jackson 4-8294

KANSAS CITY, MO.

Fred H. Hoener—Phone: Endicott 2-2630

LOS ANGELES, CALIF.

Fred H. Currie, Inc.—Phone: DU 5-7448

MEMPHIS, TENN.

Al Rathheim and Associates
Phone: MU 2-2331

MILWAUKEE, WIS.

H. L. Schultz—Phone: Broadway 6-4441

MINNEAPOLIS, MINN.

Sandoberg-Peterson Co.—Phone: West 9-6745

NEWARK, N. J.

W. A. Thompson—Phone: Bigelow 8-2277

PHILADELPHIA, PA.

F. E. Dreves—Phone: Locust 4-3060

PITTSBURGH, PA.

General Office—Phone: Atlantic 1-2750

PUTNAM, CONN.

N. A. Robinson—Phone: Walnut 8-2754

ST. LOUIS, MO.

E. R. Hensel Co.—Phone: Townsend 5-1900

SALT LAKE CITY, UTAH

Paul R. Spencer Co., Inc.
Phone: Ingersoll 6-3406

SAN FRANCISCO, CALIF.

Thos. S. Hutton & Son
Phone: Exbrook 2-7017

SEATTLE, WASH.

M. M. Mossman—Phone: Main 4-5393

TOLEDO, OHIO

Browne-Sudhoff Co.—Phone: Greenwood 2-6256

Products

Light Tank Is Strong, Chemically Resistant



A low-cost spherical tank fabricated from glass-reinforced polyester features high strength, chemical resistance and light weight. Tank is recommended as processing or storage unit for such industries as paper, chemical, petroleum, etc., where corrosive conditions necessitate a structure with high chemical resistance. Its weight is approximately one-seventh of comparable stainless steel unit. Tank is available in diameters of 6 ft (847 gals.) and 8 ft (2009 gals.). Justin Enterprises, Inc., 3755 Edwards Rd., Cincinnati 9, Ohio.


Write No. 38 on Information Card—Last Page

One Hammer Does Work of Five




A multi-faced shock-absorbing hammer serves as five hammers in one. Replaceable tips allow one tool to do work of many, from sledge power to precision sensi-

(Please turn to page 144)



WYCKOFF STEEL COMPANY

GENERAL OFFICES:
GATEWAY CENTER, PITTSBURGH 30, PA.
WORKS: AMBRIDGE, PA.—CHICAGO, ILL.
NEWARK, N.J.—PUTNAM, CONN.



WYCKOFF STEEL PRODUCTS • Carbon, Alloy and Leaded Steels • Turned and Polished Shafting • Turned and Ground Shafting • Large Squares • Wide Flats up to 12 1/4" x 2 1/4" and 14" x 1 1/4" • All types of Furnace Treated Steels including Carbon Corrected Steels

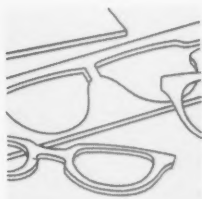
For More Facts Write No. 234 on Information Card—Last Page

IT'S AS IF **YOU** DESIGNED THE **Y-30** LINE

NEW B&L Safety Glasses combine all the features you want most



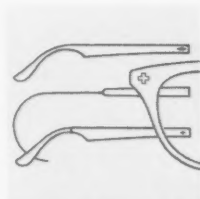
Mitre joint temples for easy fitting. No stronger hinge on the market.



Front is cut from sturdy sheet acetate, stronger than molding.



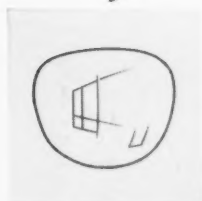
Keyhole bridge for comfortable, pressure-free nasal fit. All sizes.



Crystal, flesh and aluminum temples, easily interchanged.



Re-usable Nylok temple screws insure temples always fitting snugly.



Bal-SAFE lens toughest on the market. Clear or 3 Ray-Ban shades, or clear Enduron hard resin.



Deeper, off-center buttressed eyewire groove, more than doubles lens retention.



Comfort assured by broad rigid or adjustable nose pads, easy to fit.



S-7 lens shape for smart good looks, unobstructed vision, extra safety.



Complete interchangeability: fronts, temples, lenses, screws.

Here's smart appearance, new strength, built-in comfort, sure economy. Good looks to win workers' esteem. Much stronger frames, including a deeper buttressed eyewire groove which more than doubles lens retention. Wearer comfort assured by Bausch & Lomb expertness in ophthalmic eyewear design. Complete interchangeability and other new features assure real savings in safety eyewear costs. Mail coupon today for full Y-30 information.

**Protection-PLUS
Safety Products**

protection + economy + worker acceptance

BAUSCH & LOMB
SINCE 1853

BAUSCH & LOMB INCORPORATED
90623 Lomb Park, Rochester 2, N. Y.

Please send full information on your Y-30 line of Safety Frames.

☐ Include new free portfolio "Helpful Hints for the Man Responsible for Safety."

NAME

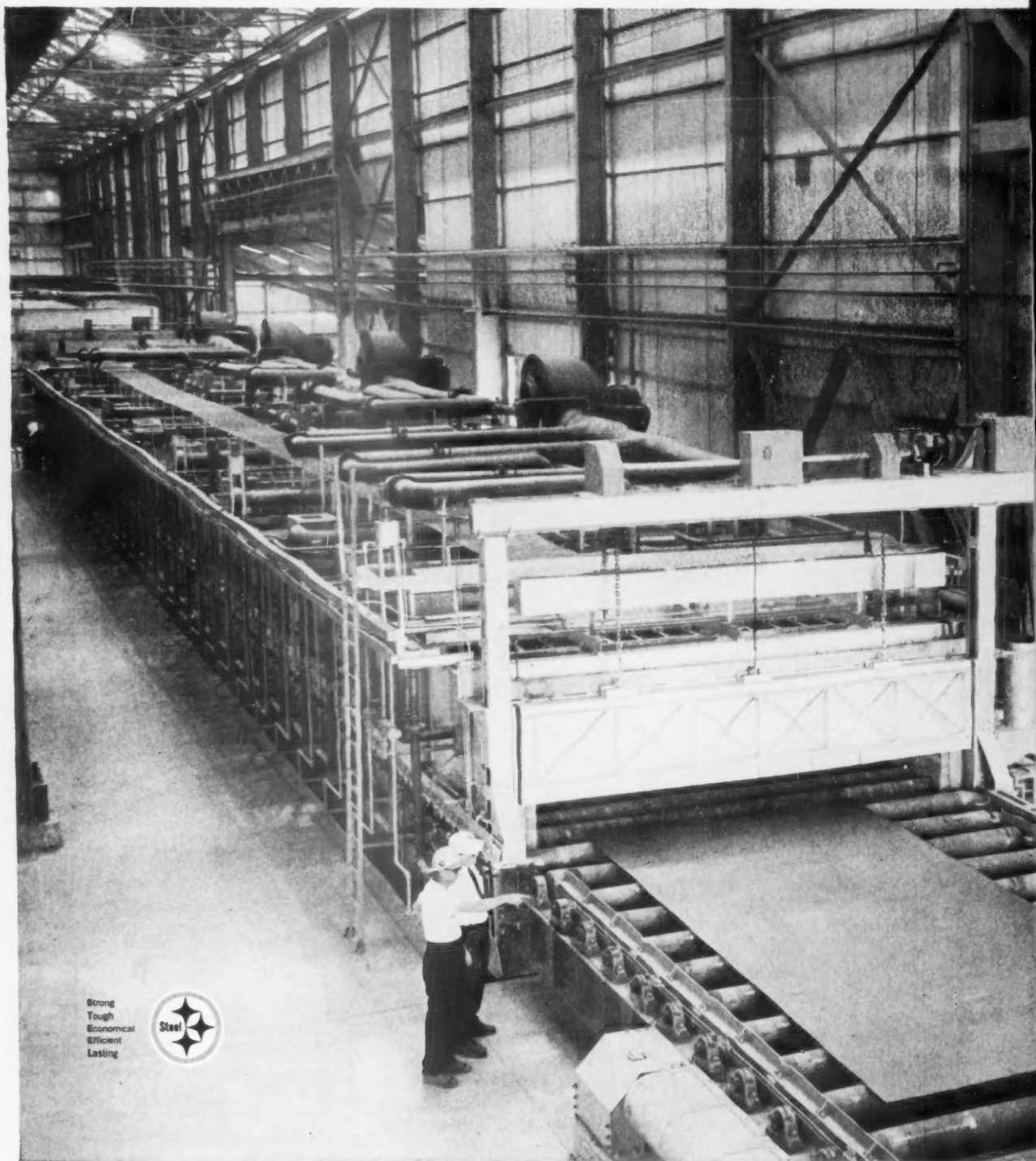
TITLE

COMPANY

ADDRESS



Sheffield now makes available



Strong
Tough
Economical
Efficient
Lasting



Completion of this new heat-treating line in Sheffield's Houston plant marks a new era for industry served by Sheffield from the Southwest. The new line shown has the capacity to heat-treat all gauges and sizes of plates rolled on the plant's plate finishing mills. It produces quenched

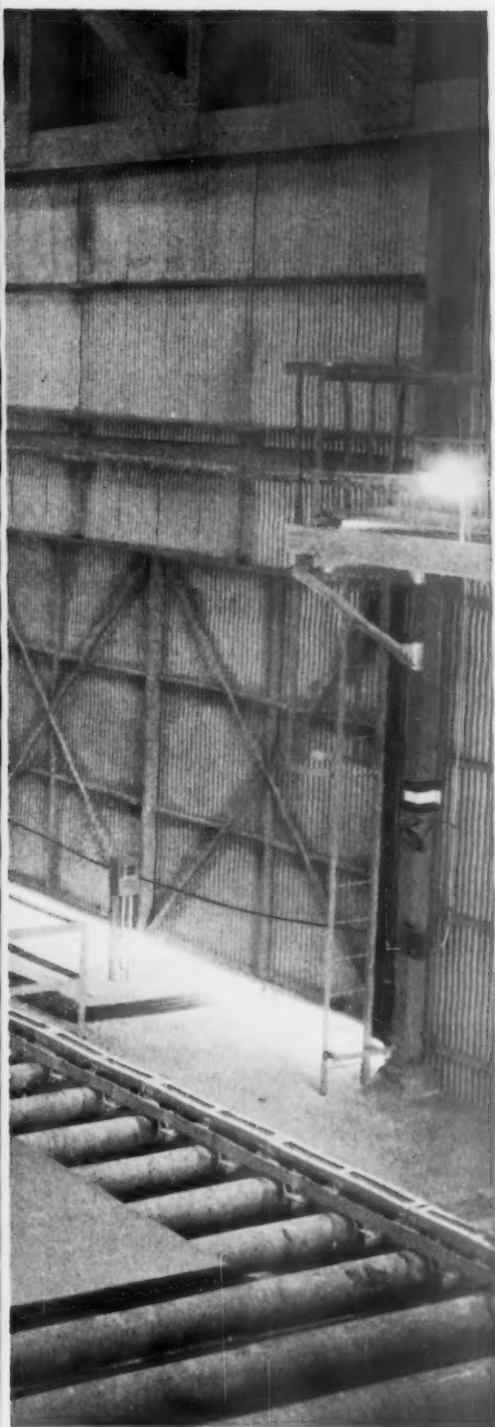
and tempered or normalized plates. It is also designed to handle the wider and heavier plates which will be rolled in the Houston plant's new 160-inch combination slab and plate mill — to be completed in 1962.

a complete line of alloy steels

New heat treating facilities now in operation

This is one of the most modern heat treating lines in the country. With this addition, Sheffield's facilities are now complete for processing all types of alloy steels including new SSS-100. This is the remarkable new Sheffield alloy steel which makes it possible to design with lighter components without sacrificing strength. For more information write **Sheffield Division, Armco Steel Corporation, Attention Alloy Sales, P. O. Box 3129, Houston 1, Texas.**

SHEFFIELD
Heat Treated Carbon
and Alloy Steels



The ultra-modern group of electronic devices you see above regulates temperature, pressure and timing in Sheffield furnaces automatically. Plates are quenched in water, then re-heated in the tempering furnace. An operator checks the entire process by closed-circuit television which can "see" the inside of the furnaces.

ARMCO Sheffield Division

Add Beauty... Lower Finish Cost with New Fasson Dec·a·tex



It's Self-Adhesive

Add luxury and distinction to your products with a finish of new Dec·a·tex. Choose from 33 colors and 12 embossed patterns . . . subtle beige kidskin to flag-red llama to shimmering copper boxcalf.

Dec·a·tex saves money two ways for it costs only a fraction as much as vinyls and other decorative materials of comparable appearance and its self-adhesive backing reduces your application costs. Just press it in place and it's there to stay.

Amazing Dec·a·tex durability is built-in by impregnating a tough kraft base with nitro-cellulose. After printing and embossing, the leather or linen-like surface resists scuffing, soiling, moisture and most chemicals.

Send for **FREE** literature and samples . . . now!

fasson® **Fasson Products**

An Avery Company

Dept. E, 250 Chester Street, Painesville, Ohio

In Europe: Fasson (Nederland) N.V., Leiden, Holland

Makers of self-adhesive papers • foils • films • for converters

For More Facts Write No. 237 on Information Card—Last Page

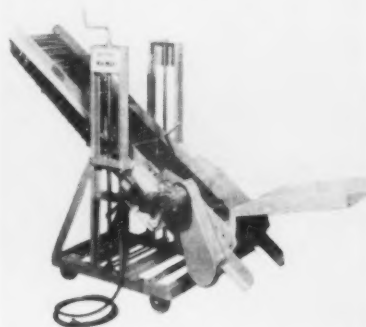
Products

(Continued from page 140)

tivity. Five tips are scientifically compounded of plastic and are secured in steel collars. They are ideal for such varied soft-faced jobs as auto body work; fine cabinet and wood work; shaping and assembling electric or other sensitive parts; work around delicate materials such as glass and glazed tiles, etc. Unique "floating head" reduces rebound by 40%. **Ramset Fastening System, Winchester-Western Div., Olin Mathieson Chemical Corp., New Haven, Conn.**

Write No. 39 on Information Card—Last Page

Conveyors Serve Wide Range of Needs



A line of portable and semi-portable conveyors with adjustable heights can be used as auxiliary or independent units to feed or discharge small, medium and large metal parts and products. Fully portable conveyor series is designed for applications where working heights and layouts are frequently changed. It features pitch adjustment of charge and discharge ends to any angle from horizontal to 45 degree incline. Semi-portable conveyor has telescopic legs (available in 13 sizes) for raising or lowering discharge end. Both can be had with neoprene-impregnated fabric belts for general purpose use or with hinged-steel belting for hot or highly abrasive materials. Both come in 4, 6, 8, 10 and 12 ft lengths, with belt width of 12, 18, or 24 in. **The May-Fran Mfg. Co., 1710 Clarkstone Rd., Cleveland 12, Ohio.**

Write No. 40 on Information Card—Last Page



New— CARMET'S 700 Series Cutting Grades and the fine art of making chips

Some people baby their carbide tools. They hold back a little on roughing cuts, because they've heard carbide is pretty brittle . . . and some of it is. Or they ease off on finishing cuts, because their tool may be too soft for long, fast passes . . . because it may wear or crater. And, some of it will.

But this is "paring-knife" machining, and it really isn't necessary. Not any more . . . not since Carmet introduced the 700 Series Steelcutting Grades. No paring knife made these chips . . . these were hogged out on a production basis by one of Carmet's new carbides . . . Grade CA-720.

The job: rough facing railroad axle forgings in an automatic tracer lathe—210 sfm—.076" feed—1¼" width of cut. The result: over 1,000 cubic inches of steel removed in 5½ minutes, floor to floor, with plenty of red hot chips like these. And, 35 axles per tool against 25 pieces for the best competitive carbide tool . . . a tool carrying a higher price tag.

Carmet's 700 Series have the edge wear and crater resistance, and the ability to endure shock and heat, to breeze through jobs like this. They're doing just that all over the country . . . right now! Next time you're setting up a mean, tool-buster of a cut, let the 700 Series make chips and money for you, just once. Your Carmet Distributor has the local stock and all the information. Call him, or write: Carmet Division, Allegheny Ludlum Steel Corporation, Ferndale, Detroit 20, Michigan. Dept. P-11.



CARMET®

CEMENTED CARBIDE • DIVISION OF ALLEGHENY LUDLUM

For More Facts Write No. 238 on Information Card—Last Page

3932

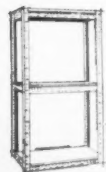
IT'S A RACK!

IT'S A TABLE!



IT'S ONE OF OVER 250 NEW ACME

PRE-CUT, READY-TO-ASSEMBLE SHOP EQUIPMENT, IN MOST NEEDED STYLES AND SIZES. Why pay a premium for shop equipment? Why settle for *almost right* design and dimension? Build it yourself from first-of-their-kind kits of Acme Steel's AIM Brand Slotted Angle. Just open the package, grab a wrench—and go. Anyone can bolt together tailored-to-the-task storage units, racks, carts, tables and benches. Each package brings you the strength, stability and assembly ease of AIM Brand Slotted Angle . . . but with the added convenience of pre-cut pieces. Everything's there: nuts, bolts, accessories, instructions. And, if your working



Customized storage units cost no more.



Eighteen sizes of flat bed carts.



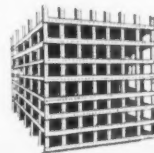
Need sturdy steel-topped tables?



How many of your foremen need a desk?



Store bars and tubes in less space.



Cube type bar racks come in 48 sizes.



Rack your sheet stock at low, low cost.

IT'S A CART!

IT'S A BENCH!



STEEL SLOTTED ANGLE KITS...

requirements change, so can this galvanized steel framing. It can be adjusted to modify design, dismantled and reused for other jobs. You never have to discard it.

If you have yet to experience the time, material and manpower savings of slotted angle construction, you can now at minimum investment. Your local AIM Brand distributor has full facts. He's in the Yellow Pages under "SHELVING" or "RACKS." Like to see slotted angle in action? Write for our new 24 page idea book, "Creative Framing at Lowest Cost": Fabricated Materials Division, Acme Steel Company, Dept. PMC-111, 135th St. & Perry Ave., Chicago 27, Ill.



IDEA LEADER IN

FRAMING - STRAPPING - STITCHING

For More Facts Write No. 239 on Information Card—Last Page

Office Equipment and



Large organizations are constantly wrestling with a deluge of meaningless forms and records. Proper planning can reduce excess paperwork.

Get Rid of Meaningless Forms

By Paul W. Flandro, Litton Systems, Inc.

EFFICIENCY can be achieved with well-planned forms only by controlling them through people—not through paper. Today, we are burying ourselves or letting others bury us under bewildering stacks of poorly designed forms.

The reason: Paper handling is not easily measurable and management is not fully aware of this tremendous waste in man-hours. As a company grows, so does its "paper empire." The tremendous economic growth of the United States in the past decade has set a vast number of people wrestling with a deluge of meaningless forms and records.

We allow insignificant, non-essential reports to become part of the permanent workday and all too often let automated office equipment rule procedures and methods.

One view of this difficult situation traces a heavy load of paperwork to poor organization. Management usually fails to recognize the need for modernization in this area. When it is recognized, management is reluctant to make a change because of employees' innate resistance.

Purchasing agents are in a unique position to aid in the struggle to reduce paperwork. More than that, they have an obligation to take certain necessary steps.

For example, don't be so concerned about the cost of printing but rather look into two of the major costs involved in the use of forms: labor and storage.

The last stop before a form goes to the printer is the purchasing department. P.A.'s can boost company profits by taking advantage of these tips:

- Determine if the form is necessary. See if the form will also serve other departments, thus eliminating the necessity for several forms.
- Decrease the number of errors by requiring fewer strokes of the typewriter or pencil. The fewer the strokes, the greater the accuracy.
- Use only the unit price. In small company purchasing, it is unnecessary to extend unit prices. If totals are needed, accounts payable can furnish them.
- Let the accounts payable file be purchasing's alphabetical file.

- Have a short, concise, up-to-date purchasing manual. Follow up to be sure that all key personnel have the same interpretation of the manual.

- Number forms in descending order. For example, purchase orders might be printed in a block running from 5000 to 1. The numbers will provide a perpetual inventory of remaining forms.

- Keep the number of copies to a minimum. Building up the amount of protective paper for the "just-in-case" files costs floor space and labor to maintain and store.

- If you change a form, throw away all the old style forms as of a certain date. Don't try to "use them up". You'll find yourself with a set of double standards.

- Standardize on form sizes. This can save a great deal of time in handling and filing.

Without a determined effort to control forms and the use of forms, clerical efficiency is certain to be impaired. Purchasing agents must exert their influence in this area in order to keep costs down and increase efficiency.



NEW BOON TO BUSINESS! New Mongol "Diamond Star" lead is superior in all five points:

- Longest Writing Mileage • Jet Black Writing
- Uniformity of Degree • Silky Smoothness
- Exceptional Point Strength

Mongol's new "Diamond Star" lead is the only lead of its kind available in all five popular degrees: 1—very soft, 2—medium, F—firm, 3—hard, and 4—very hard. Comes six 12 packs in a ½ gross box—a convenient inventory and issue unit. **No increase in price!**

See your nearest stationery supplier for Mongol pencils with new "Diamond Star" lead by EBERHARD FABER—your one source of supply for all writing needs.

NEW MONGOL "DIAMOND STAR" LEAD In All 5 Degrees!

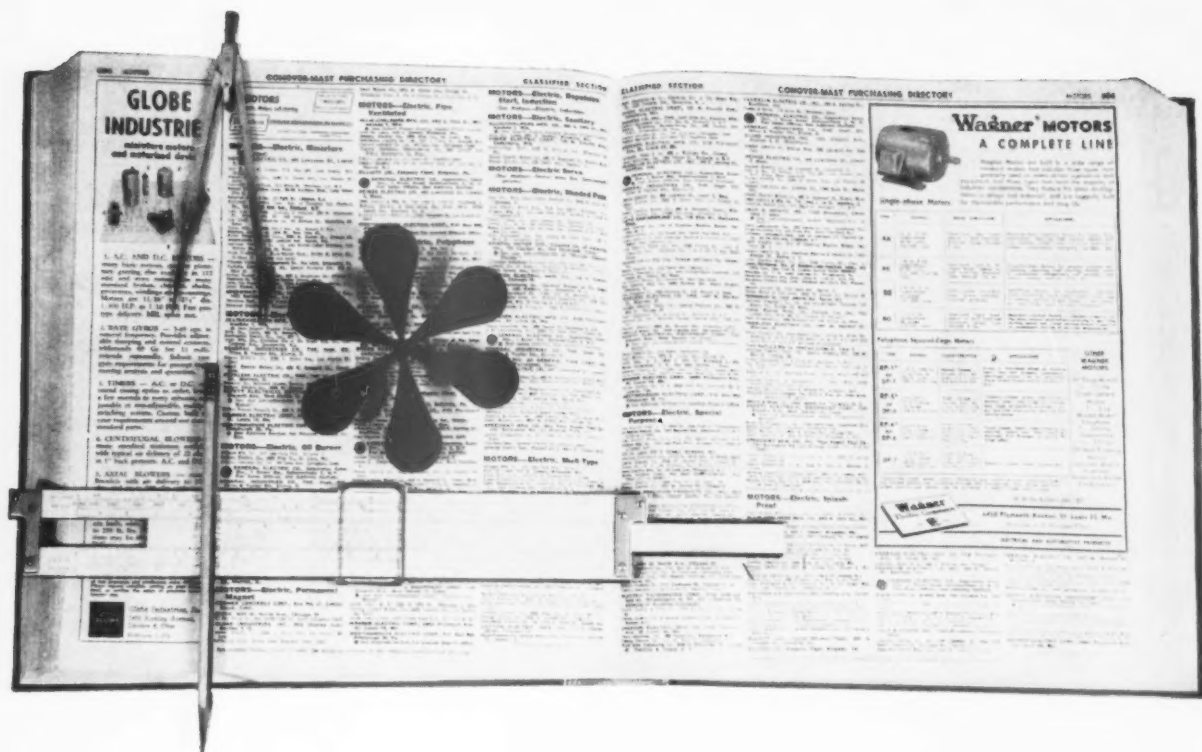


SINCE 1849

EBERHARD FABER
puts its Quality in writing

Wilkes-Barre, Pennsylvania / New York / Toronto, Canada

For More Facts Write No. 240 on Information Card—Last Page

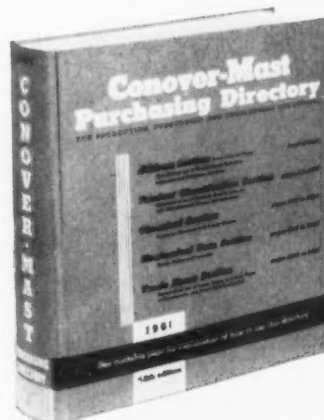


*Value Analysis Starts Here

Good suppliers are the foundation of any value analysis program. CONOVER-MAST PURCHASING DIRECTORY gives you a reliable list of manufacturers of industrial products. It gives you:

- the company name,
- address,
- telephone number,
- size of company,
- and necessary technical data.

Next time you use a directory, use CMPD.



Conover-Mast Purchasing Directory

205 E. 42nd St. New York 17, N. Y.
MU 9-3250



multiple copies
without carbons!
for cleaner, clearer,
easier-to-handle forms...
use NCR PAPER

without carbons!
for cleaner, clearer,
easier-to-handle forms...
use NCR PAPER

without carbons!
for cleaner, clearer,
easier-to-handle forms...
use NCR PAPER

NCR PAPER provides copies without any kinds of carbons. It's ideal for all multi-copy forms. Call your local printer or forms supplier for free samples. Call Today.

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio
1039 offices in 121 countries • 77 years of helping business save money

NCR PAPER

saves money

Saves enough time and effort to increase work output 30%.

NCR PAPER

speeds handling

No carbon paper handling and disposal. NCR PAPER provides copies without carbons!

NCR PAPER

won't smear

Copies are never smudged or smeared, regardless of the number of times handled.

NCR PAPER

prevents alterations

It can be erased—but not without detection.

NCR PAPER

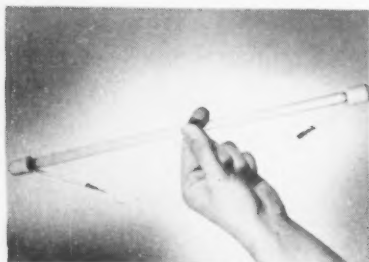
is easy to use

Produces up to 5 handwritten copies and 8 or more copies with business machines.

**NCR PAPER
ELIMINATES
CARBON PAPER**

For More Facts Write No. 241 on Information Card—Last Page

Office Equipment



A new compact and efficient **ultraviolet lamp** will speed reproduction by office copiers and other duplicating equipment. The 750-watt tubular photochemical lamp produces 25% more ultraviolet radiation than previous lamps of the same length and wattage. The lamp has a useful life of 750 hours. **General Electric Company, Large Lamp department, Cleveland, Ohio.**

Write No. 41 on Information Card—Last Page

New **carbon paper** in a single finish and weight has been introduced by **Roytype division, Royal McBee Corp., 850 Third Ave., New York, N. Y.** The ink formula

is "suspended" in a plastic base and released gradually when type strikes the paper—eliminating the need for lighter weight or different finish for multiple copy set-ups.

Write No. 42 on Information Card—Last Page



The Everest K3 is a new light-weight **portable typewriter** with a segment shift. The nine-pound, compact machine has a two-color ribbon, 44 keys, and is available in three distinctive colors. It has a selection of type styles. **Alma Office Machine Corporation, 349 Broadway, New York 13, N. Y.**

Write No. 43 on Information Card—Last page



A nominally-priced **book rack** for desks has been announced by **Protecto Mfg. Co., 239 East Front St., Owatonna, Minn.** It has a bright gold luster finish, arms that fold flat for storage, and plastic tips on the legs to prevent scratching.

Write No. 44 on Information Card—Last Page



A **microfilm reader** which doubles as a printer has been announced by **Documat, Inc., 75 East 55th St., New York 22, N. Y.** The new unit completes prints within 25 seconds after the operator locates the desired image on the reader screen and pushes the "print" button. The machine will accept 16 or 35mm film in roll form, jackets, or aperture cards. The copies can be made in dull finish or semi-gloss finish for reproduction.

Write No. 45 on Information Card—Last Page



File at Random

Acme Electrofile ends refiling. You can do it blindfolded! Misfiling is impossible. Push-button "recall" spots the card you want.

Think of the time and money saved in billing, research, customer service, personnel records, hundreds of other uses. To speed up your operation with push-button record-keeping send coupon today.



... Find at Once!

Just touch the keyboard. Electrofile automatically selects a card—or group of cards. Code by name, number or subject—even phase of subject.

ACME VISIBLE

ACME VISIBLE RECORDS, Inc.
8211 West Allview Drive, Crozet, Va.
Please let me have full facts on Acme Electrofile, and why it is today's most advanced filing concept.

NAME _____ TITLE _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

For More Facts Write No. 242 on Information Card—Last Page

Publication of new catalog was announced by **Repeat-O-Type Stencil Mfg. Co., Inc., 153 Coffey St., Brooklyn 31, N. Y.** It shows a complete line of stencil and spirit duplicating supplies and includes a new stencil which is carbon cushion interleaved.

Write No. 46 on Information Card—Last Page

***A new line of color-engineered
data processing auxiliary units created specifically
for the modern automated office!***

Datacase key punch desks provide the working top space and storage operators always need — and seldom have. Hidden clip holds desk to machine tightly and firmly.

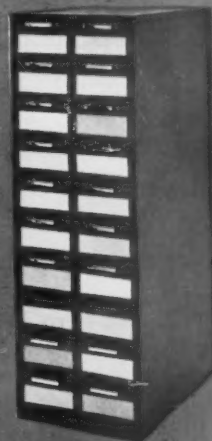


DATACASE BY STEELCASE

Datacase is a new word for a new line of key punch desks and chairs, Convertibles and magnetic reel storage cabinets created specifically for the modern automated office. Each unit is characterized by smart design and superb workmanship—and distinguished by the widest variety of colors offered in the field. Twenty-three to be exact. And the finish has an acrylic base which assures many added years of service. Datacase is created by the world's leading manufacturer of fine steel office furniture, Steelcase Inc., Grand Rapids, Michigan; Canadian Steelcase Company Ltd., Don Mills, Ontario.

Datacase is sold only through leading office equipment stores!

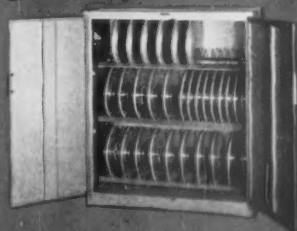
Datacase is sold, installed and serviced by the Steelcase office furniture dealer in your area. Call him today for your free copy of our new full-color Datacase catalog. Or, mail this coupon — and we'll send you your copy.



Punched card files. Datacase punched card files provide maximum storage space with sound construction and ease of use. This 20-tray file has a capacity of 76,900 cards. Also available: 10-tray, counter-height file with 38,250 card capacity.



Desk table top files. For master cards and decks of cards which must be always available. This two-drawer file has a capacity of 4,912 cards. Also: four-drawer file, 15,300 capacity, and single-file drawer, 2,456 capacity.



Magnetic reel tape storage. Designed to provide greater security at low per-reel storage cost in the processing area. This counter-height cabinet, with two locking doors, stores 57 reels. Also available in 95 reel capacity.

P-11-20

STEELCASE INC.

Grand Rapids, Michigan

Gentlemen: Please send me a free copy of your new Datacase catalog. There is no cost or obligation.

Name

Position

Company

Address

City Zone

State

For More Facts Write No. 243 on Information Card—Last Page

Southeastern P.A.'s Hold 18th Annual Conference

GRACIOUS southern hospitality was very much in evidence at the eighteenth annual conference of the N.A.P.A.'s seventh district. More than 400 purchasing agents from 13 associations in the southeast gathered in Atlanta to participate in stimulating meetings, informative workshops, and hearty comradeship.

Conference chairman Jim McDonald of the host Georgia Association and his staff made sure that every program—from the general sessions to the banquet—ran according to schedule. Other activities during the three-day session included a complete ladies program and the Georgia Association's industrial products show.

Featured speaker at the con-

ference was N.A.P.A. president Russ Stark. Stark urged the purchasing agents to "face the fact that we as purchasing people are judged not by our deeds alone but by the deeds of others as well." He noted, however, that "There are not many companies left operating with policies that force purchasing people to be difficult and hard to deal with."

Stark added that "Probably no profession has been so stereotyped by the acts of one of its members as the purchasing profession. The reason is very few people understand first how business in general is run and second, the part modern purchasing plays on the business team."

Another speaker, Harold Berry

—chairman of the national professional development committee—told the conference that the association hopes to establish an N.A.P.A. Foundation. This foundation, he said, would hold and maintain funds for long-term professional development projects approved by the N.A.P.A.

Cover 3 Major Areas

The three major areas of N.A.P.A. concern — professional development, value analysis-standardization, and public relations—were covered by workshops and speeches during the conference. Public relations, in particular, was analyzed in depth by the national, district, and conference public relations chairmen—Paisley Boney, Bill Beckham, and Joe C. Reeves, respectively.

One of the special features of the conference was an Old Timers Luncheon for those with 15 or more years of purchasing experience. Fifty-four purchasing agents attended that luncheon held at noon on the second day.

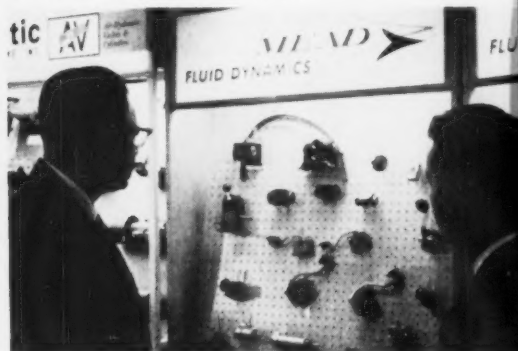
(Please turn to page 156)

General chairman Jim McDonald (l.) checks last-minute details before the opening of the conference with Arden Taylor, finance chairman.



Mayor William B. Hartsfield of Atlanta greeted the P.A.'s at the conference just as he did the last time it was held in Atlanta, nine years ago.

The Simco Supply Co. booth was one of the most popular at the industrial products show run in conjunction with the conference. Simco's Albert Chambers (r.) discusses the Mead Fluid Dynamics line with Charlie Bricker of Riegel Textile Corp.





Check out-of-town markets fast by Long Distance

Long Distance calls can save you time and money, especially if you need to reach out-of-town suppliers quickly. Calling is direct. You get the answers to your questions immediately.

You can also shop your markets thoroughly, keep a closer check on competitive prices, make better buys.

Long Distance is a valuable purchasing tool. Try it and see for yourself.

LONG DISTANCE RATES ARE LOW

Here are some examples:

Newark, N. J. to Boston	80¢
St. Louis to Chicago	90¢
Milwaukee to Pittsburgh	\$1.20
Atlanta to Cleveland	\$1.35
Kansas City to New York	\$1.60

These are day rates, Station-to-Station, for the first three minutes. Add the 10% federal excise tax.

BELL TELEPHONE SYSTEM

Long Distance pays off! Use it now . . . for all it's worth!





Three of N.A.P.A.'s hardest workers discuss purchasing at the conference: (l. to r.) Harold Berry, professional development chairman; Russell Stark, president, and Gordon Burt Affleck, former president.



(Cont'd from page 154)

Two P.A.'s who previously worked together but hadn't seen each other for 35 years met at the seventh district conference. John Norman (l.), of Southern Bell Telephone in Jackson, Miss., greets his old friend Arthur Harris, of Printpak in Atlanta.



Joe Mate, professional development chairman of the Florida Association, spoke at the after-breakfast workshop on Pro-D. He discussed the educational course his association has developed for training purchasing agents.

More than 400 purchasing agents attended the conference at the Atlanta Biltmore Hotel. Many brought their wives.



Dr. Charles E. Irvin, a General Motors consultant, gave an inspiring address at the banquet on the importance of the free enterprise system.



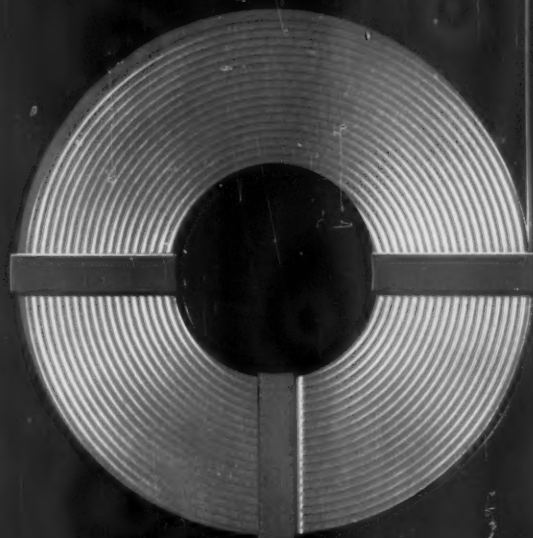
Jim Clark, chairman of the district value analysis-standardization committee, answered many questions following his workshop on Tuesday morning.



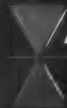
At the festive banquet on Monday night, retiring district activities chairman George Bosworth (r.) presents the annual attendance trophy to Richard Turpin, national director of the Mississippi Association.



Program chairman Cliff Servais was one of the key speakers at the VA workshop. He told the audience how his company, Celanese Fibers Co., saved money by applying value analysis to an important MRO item.

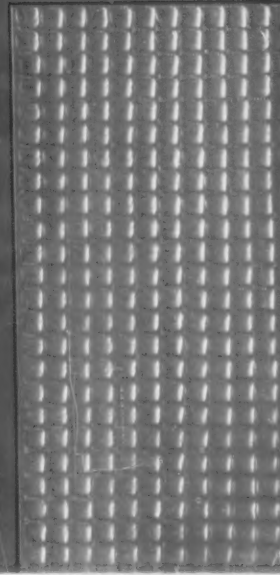
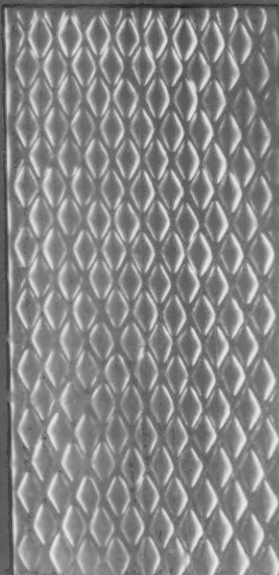


Widest Range from Any Distributor Source. Calling on your local Alcoa distributor for aluminum in all its forms is like having an Alcoa plant next door. Nobody else stocks as much sheet and plate; wire, rod and bar; tube and pipe; and extruded shapes in as many sizes, alloys and finishes. Nobody else can respond as quickly to your call for metal or technical advice.



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IDAHO
Boise
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 (Franklin 7-3960)

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Indianapolis 12
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KANSAS
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KENTUCKY
Louisville 3
 Williams and Company, Incorporated
 (Juniper 3-7181)

LOUISIANA
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 Metal Goods Corporation
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MARYLAND
Baltimore 7
 Whitehead Metals, Inc.
 (Windsor 4-2000)

MASSACHUSETTS
Boston 19
 Eastern Metal Mill Products Co.
 (Highlands 2-5900)

Cambridge 39
 Whitehead Metals, Inc.
 (Trowbridge 6-4680)

MICHIGAN
Detroit 12
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 (Twinbrook 2-3200)

Detroit (Hazel Park)
 Meier Brass & Aluminum Co.
 (Jordan 6-3902)

Detroit 10
 Steel Sales Co. of Michigan
 (Tyler 6-3000)

MINNESOTA
Minneapolis 13
 Steel Sales Co. of Minnesota
 (Sterling 1-4893)

MISSOURI
North Kansas City 16
 Marsh Steel & Aluminum Co.
 (Grand 1-3505)

North Kansas City 16
 Metal Goods Corporation
 (Grand 1-3516)

St. Louis 14
 Metal Goods Corporation
 (Harrison 7-1234)

St. Louis 10
 Steel Sales Co. of Missouri, Inc.
 (Prospect 1-5255)

NEW HAMPSHIRE
Nashua
 Edgcomb Steel of New England, Inc.
 (Tuxedo 3-7731)

NEW JERSEY
Elizabeth
 Adam Metal Supply of New Jersey
 (Flanders 1-2550)

Englewood
 Tubesales (Tube & Pipe)
 (Lowell 7-4400)

Harrison
 Whitehead Metals, Inc.
 (Humbolt 5-5900)

Hillsdale 5
 Miller Steel and Aluminum
 Division of Robert Campbell Co., Inc.
 (Waverly 6-6000)

NEW YORK
Buffalo 5
 Brace-Mueller-Huntley, Inc.
 (TR 7-8700)

Buffalo 7
 Whitehead Metals, Inc.
 (TR 6-3100)

New York (Long Island City 1)
 Adam Metal Supply
 (Stillwell 6-737)

New York (Brooklyn)
 Straus Aluminum Company, Inc.
 (Browning 2-7000)

New York 14
 Whitehead Metals, Inc.
 (Watkins 4-1500)

Rochester 5
 Adam Metal Supply of Rochester
 (Locust 2-4260)

Rochester 1
 Brace-Mueller-Huntley, Inc.
 (Congress 6-4560)

Rochester 19
 Whitehead Metals, Inc.
 (Butler 8-2141)

Syracuse 1
 Brace-Mueller-Huntley, Inc.
 (Howard 3-3341)

Syracuse 1
 Whitehead Metals, Inc.
 (Howard 3-6241)

NORTH CAROLINA
Charlotte 6
 Edgcomb Steel Company
 (Franklin 5-3361)

Greensboro
 Edgcomb Steel Company
 (Broadway 5-8421)

OHIO
Cincinnati 14
 Central Steel and Wire Company
 (Avon 1-2230)

Cincinnati 37
 Williams and Company, Incorporated
 (Valley 1-5555)

Cleveland 28
 A. M. Castle & Co.
 (Axminster 2-7600)

Cleveland 14
 Williams and Company, Incorporated
 (Utah 1-5000)

Columbus 12
 Williams and Company, Incorporated
 (294-1623)

Toledo 12
 Williams and Company, Incorporated
 (Greenwood 5-8861)

OKLAHOMA
Tulsa 13
 Metal Goods Corporation
 (Temple 5-2561)

OREGON
Portland 9
 Pacific Metal Company
 (Capitol 7-0693)

PENNSYLVANIA
Philadelphia 34
 Edgcomb Steel Company
 (Garfield 3-6300)

Philadelphia 33
 Metal Supply Company
 (Center 6-0220)

Philadelphia 40
 Whitehead Metals, Inc.
 (Baldwin 9-2323)

Pittsburgh 33
 Williams and Company, Incorporated
 (Cedar 1-8600)

York
 Edgcomb Steel Company (47-1931)

RHODE ISLAND
Providence
 Edgcomb Steel of New England, Inc.
 (Poplar 7-0900)

SOUTH CAROLINA
Greenville
 The J. M. Tull Metal & Supply Co., Inc.
 (Cedar 3-8365)

TENNESSEE
Memphis 5
 Metal Goods Corporation
 (Whitehall 8-3407)

TEXAS
Dallas
 McCormick Steel Company
 (CH 7-3104)

Dallas 35
 Metal Goods Corporation
 (Fleetwood 1-3271)

Houston 1
 McCormick Steel Company
 (OR 2-6571)

Houston 1
 Metal Goods Corporation
 (Riverside 7-1110)

UTAH
Salt Lake City 1
 Pacific Metals Company, Ltd.
 939 South 6th West
 (Davis 8-2222)

WASHINGTON
Seattle 8
 Ducommun Metals & Supply Co.
 (Parkway 5-1500)

Seattle 4
 Pacific Metal Company (Main 2-6325)

Spokane 4
 Pacific Metal Company
 (Keystone 5-3681)

WISCONSIN
Milwaukee 1
 Central Steel and Wire Company
 (Humboldt 1-5000)

Milwaukee 8
 Steel Sales Co. of Wisconsin
 (Hilltop 2-2020)

Call The Aluminum Man . . . his stock's the most complete!

Your Alcoa distributor sales representative—*The Aluminum Man*—maintains a warehouse bulging with sheet and plate; tube and pipe; extruded shapes; wire, rod and bar. His stock represents the widest range of aluminum products available from any distributor source. He can arrange for them to be slit, sawed or sheared to your specifications—furnish technical advice you may need on alloy selection and fabrication techniques. He's your fastest supply line for aluminum in any form when you need it. Your nearest Alcoa distributor is listed on this page, so give him a call . . . soon. Aluminum Company of America, 846-L Alcoa Building, Pittsburgh 19, Pa.

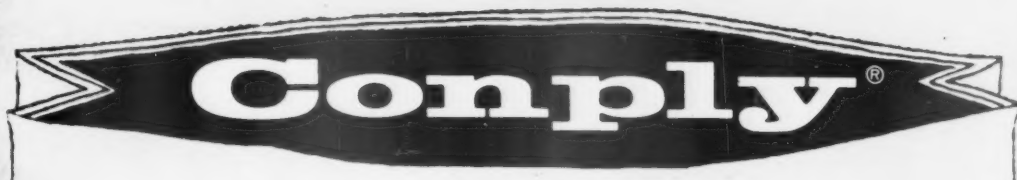
ALCOA ALUMINUM

DISTRIBUTED NATIONALLY

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in multiwalls
come from
Continental**



Paperboard and Kraft Paper Division



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Chicago 3, Ill. ■ 523 Southland Center, Dallas 1, Texas
919 Fisher Bldg., Detroit 2, Mich. ■ 1 Belmont Ave., Bala-Cynwyd, Pa.
115 E. Pennsylvania Ave., Southern Pines, N. C.
2000 North 16th St., Arlington 1, Va.
P.O. Box 7662, Mountain Brook, Ala.
106 Cambridge Road, King of Prussia, Pa.
3335 Bailey Road, Cuyahoga Falls, Ohio

For More Facts Write No. 245 on Information Card—Last Page

Industry Leaders Address District One Conference



Huddle of District One conference chairmen includes Rex C. Baker (l.), Heflin Steel Supply Co.; John C. Owens (c.), Reynolds Metals Co., general chairman; and W. P. Culton, Mountain States Telephone Co.



Art Melka (l.) discusses the conference with Charles Perkins (c.) and District One Vice President William G. Watt.

AN EXTREMELY informative two-day conference, held recently at Phoenix, Ariz., was sponsored by District One of the National Association of Purchasing Agents.

More than 500 P.A.'s from the West Coast and Southwest dressed informally and attended a variety of workshop sessions. Prominent speakers brought messages from industries in all parts of the country. These are some of the highlights of these messages:

- "‘Buy American’ as a slogan is an admission of incompetence and a banner of disgrace for the American free-enterprise system."—J. K. Fowlkes, Value Analysis, Inc.

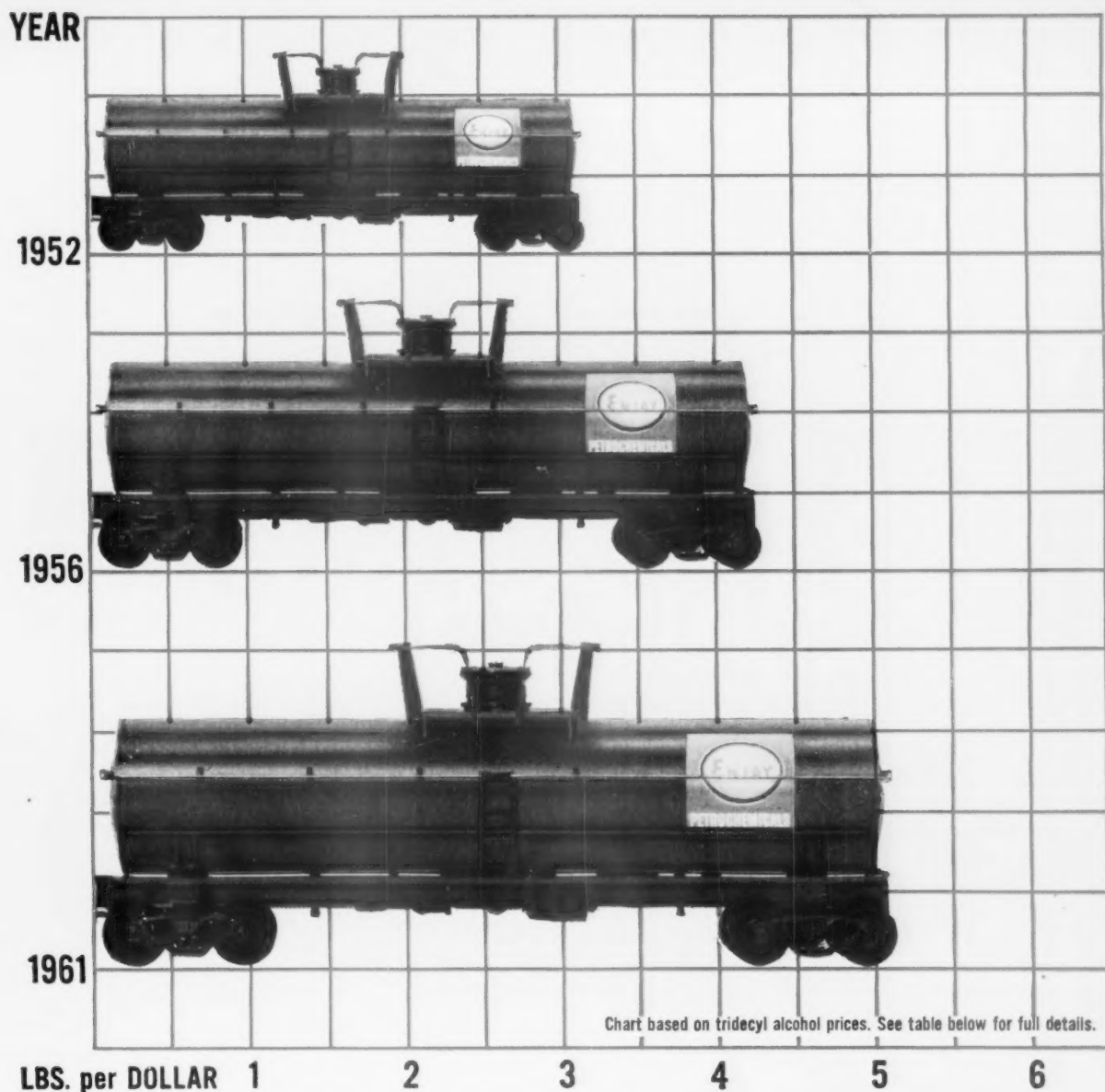
- "One of top management's most important duties is to identify and select from among the specialists ‘broad guage’ people for top management positions."—J. Merrill Bushnell, Pacific States Cast Iron Pipe Co.

- "Negotiation is probably the most widely used form for purchasing infrequent items and is the method in which the alert and intelligent municipal buyer proves his worth."—N. Christy Liuzzo, City of Phoenix.

- "The best file is the waste basket, but it takes real courage to use it."—Paul W. Flandro, Litton Systems, Inc.

John C. Owens, Reynolds Metals Co., was general conference chairman. He was assisted by Edwin F. Egerer, Ducommun Metals & Supply Co.; R. W. Ashard, Zions First National Bank; and Jerry McLain, Del E. Webb Corp., program chairman.

Rod A. Clelland, Arizona State Hospital, is president of the host association, the Purchasing Agents Association of Arizona.



LOWER PRICES MEAN YOUR DOLLAR BUYS UP TO 60% MORE ALCOHOL THAN IN 1952!

Expanded facilities, increased sales and production economies have enabled Enjay to pass substantial savings along to its oxo alcohol customers over the years. The table at right shows you how much more isooctyl, decyl, or tridecyl alcohol your dollar buys today as compared to 1952.

At the same time, the quality of Enjay alcohols is constantly being improved. Enjay also stands ready

with technical assistance on any problems you may have. These are two added advantages of dealing with a leader in the chemical field.

For more information on the full line of Enjay alcohols and chemicals, write to Enjay, 15 West 51st Street, New York 19, N. Y.

	YOUR ALCOHOL DOLLAR BUYS:		
	1952	1956	1961
ISOOCTYL (lbs.)	3.8	4.8	5.6
DECYL (lbs.)	3.6	4.8	5.6
TRIDECYL (lbs.)	3.1	4.2	5.0

EXCITING NEW PRODUCTS THROUGH PETRO-CHEMISTRY

ENJAY CHEMICAL COMPANY

A DIVISION OF HUMBLE OIL & REFINING COMPANY



All here . . .

components that satisfy

all pressure/flow system needs

IMPERIAL EASTMAN

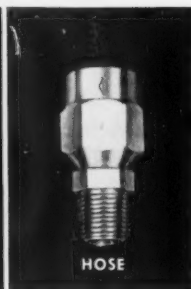
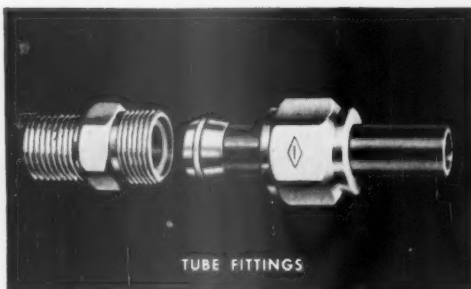


Now together, Imperial-Eastman meets all your hydraulic-pneumatic-flow component needs: tube fittings, valves, couplings, flexible and rigid hydraulic lines, thermoplastic tubing and tubing tools.

This *engineered* line gives you the exact product for every type of service condition—and the tools to make sure your assemblies are absolutely right.

For added satisfaction at your point of order, Imperial-Eastman products are available through highest caliber distributors.

For complete information, write for Catalog No. 101.



IMPERIAL  **EASTMAN**
Imperial-Eastman Corporation General Offices: 6300 West Howard Street, Chicago 48, Illinois

Imperial-Eastman Corporation (Canada) Ltd., Barrie, Ontario • Imperial-Eastman, S.A., Apartado Postal 26544, Mexico 13, D.F.

For More Facts Write No. 247 on Information Card—Last Page

Only

IMPERIAL  EASTMAN

offers a line
as complete as this

When we say *your most complete line* of pressure flow system components for all hydraulic, pneumatic, instrumentation and other applications—here's what we mean:

TUBE FITTINGS OF EVERY TYPE AND SIZE—FOR ALL PRESSURES, TEMPERATURES

- Hi-Seal® Butt Joint Fittings, Braze-Seal Hi-Pressure, Hi-Duty, 37" Flare, 45" Flare, Flareless, Flex, Compression, Inverted Flare, Threaded Sleeve and Plastic Tubing Fittings.

FLUID CONTROL VALVES

- Needle, Toggle, Diaphragm, Plug, Blow-Down and Kwik-Connect Types for pressures up to 5000 psi.

HOSE AND COUPLINGS

- Medium-Pressure Hose and Tube Assemblies, Couplings and Fittings for One-Wire Braid Hose
- High-Pressure Hose and Tube Assemblies, Couplings and Fittings for Multiple-Wire Braid Hose
- Low-Pressure Hose and Tube Assemblies, Couplings and Fittings for Fabric Braid Hose
- All Synthetic—for Pressures up to 3000 Lb.
- Adapter Unions, Adapters and Tube Fittings

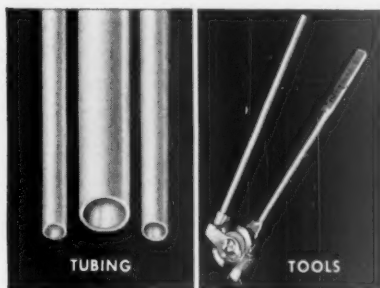
TUBING

- Plastic and Thermoplastic

TUBING TOOLS

- Cutting, Flaring, Bending, Reaming, Swaging, Pinch-off, Refacing Tools
- Service Aids

No doubt about it now—see your Imperial-Eastman distributor first for all hydraulic-pneumatic-flow system components.



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Chicago 48, Illinois

Association News

Southeastern Mass. Group Elects Officers



New officers of the Association are (seated, l. to r.): Joseph Desjardins, Aerovox Corp., director; James A. McCarthy, Atlas Tack Corp., president; Edmund V. Hickey, Aerovox Corp., vice president; (standing, l. to r.): John M. Taylor, Havg Industries, secretary; T. E. Howarth, Elbe File & Binder Co., director; D. J. O'Connor, Globe Mfg. Co., director; Vincent J. Robidoux, Winthrop Atkins Co., treasurer; and Mark W. Knowlton, John I. Paulding, Inc., director.

Last Quarter Boom Forecast at N.E. Meeting

Industrial production will top previous records during the last quarter of 1961, an economic expert told the Purchasing Agents Association of New England.

David W. Sampson, vice president of McGill Commodity Service, told the P.A.'s that "new stimulants to the economy will create a boom of great magnitude. Unlike conditions which existed a year ago, the curtain is now going up on an economic setting which features the prospect of the most active fall period in history."

The Boston economist said increased federal spending in defense and highway contracts is not the big issue. "Rather," Sampson declared, "we must concentrate on the solid foundation that supports unprecedented expansion in business during the period directly ahead."

Manufacturers' new orders for July were close to the all-time high, he said, and unfilled orders for the same period jumped \$1 billion—one of the sharpest increases on record.

Although retail sales failed, in

every month this year, to top the 1960 rate, Sampson noted that the bottom of the recent recession came in the first quarter of '61. Thus aggregate figures for the first eight months, he said, reflect the poor records of the opening months.

Car Sales Are Disappointing

Sampson, a well-known economist, also declared that "The real tip-off is what is happening at the latest count, which indicates that manufacturing and trade sales in July actually exceed the July record of a year ago, both in the durable and nondurable categories."

About the automotive situation, Sampson had this to say: "Expenditures for new cars have been a distinct disappointment this year. The trend away from austerity and economy in the 1962 cars is the basic reason which will make it possible for the automotive industry to take on higher wage and fringe benefit costs in the ultimate union contract."

"Incidentally, let's not kid ourselves that this automotive problem will not have a chain reaction

(Please turn to page 166)

your **HYATT** sales

PURCHASING



HE WORKS EFFECTIVELY TO HELP REDUCE YOUR COSTS!

No one knows more about cylindrical bearings than your Hyatt Sales Engineer! What's more, he's well versed in value analysis and can frequently produce dramatic cost reductions and important product improvement ideas. P.A.'s like his thoroughness . . . his sincere interest in making the best recommendation.

HE WORKS FROM EXPERIENCE IN PROBLEMS LIKE YOURS!

The experience and knowledge of this trained bearing specialist regularly help save vital man-hours and dollars for his customers. His painstaking study prior to every bearing recommendation has gained him an excellent reputation for efficient, dependable design suggestions.



HE WORKS TO MEET RIGID QUALITY STANDARDS!

Frequently your Hyatt Sales Engineer will spend mutually rewarding hours studying customer products or prototypes in action. This helps assure the success of critical applications and often results in valuable suggestions for product improvement, cost reductions and ideas for future product development. At left, Hyatt Sales Engineer awaits surface finish test results on race pathway of farm tractor differential bearing.

HE WORKS TO MEET YOUR TIGHTEST SCHEDULES!

When delivery is a critical factor in your production schedule, sales department estimates or customer promises, you can rely on the *Working Partner* interest of your Hyatt Sales Engineer. Checking on your order from production line to shipping room, he works efficiently to make sure you've made a profitable purchase!



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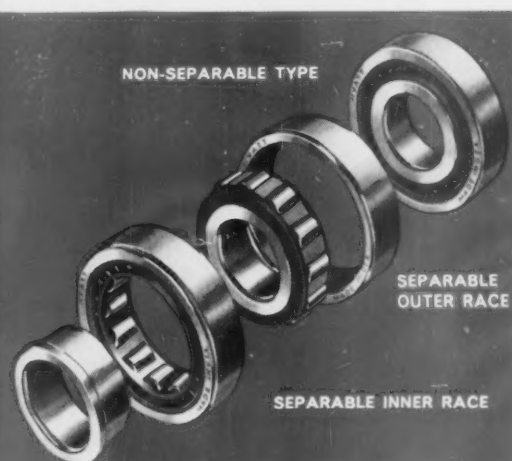
engineer is a working partner!



HE WORKS WITH OUR TOP ENGINEERING PEOPLE!

When you specify Hyatt bearings for your job, you get that *something extra* in engineering. The nation's finest bearing application engineers are assigned to your problem! What's more, you get the complete range of General Motors' vast research and engineering facilities. Above, your Hyatt Sales Engineer confers with metallurgist and thrust load experts before making final recommendation.

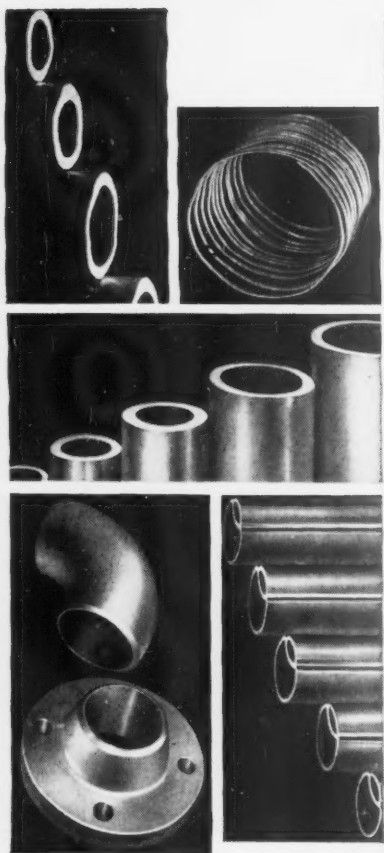
HE WORKS WITH THE MOST COMPLETE LINE IN THE INDUSTRY! Hyatt's new catalog (No. 162) places at your fingertips the most complete cylindrical bearing line in the industry...broad flexibility in handling all your anti-friction bearing requirements! Contact your nearest Hyatt Sales Engineer for your copy today.



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HY-ROLL BEARINGS FOR MODERN INDUSTRY

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HOLOBAR
FITTINGS
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Write No. 249 on Information Card—Last Page

Association News

(Continued from page 163)

on next year's steel contract. What has happened today sets a definite pattern for steel."

Sampson told the P.A.'s that "In no major discussion has there been significant action toward reducing non-military expenditures, many of them political in nature. There seems to be a general feeling among Administration heads that it is possible for us to have our cake and eat it too, based on the theory that higher business activity will, in turn, generate larger tax revenues."



David W. Sampson, McGill Commodity Service, foresees an era of unprecedented business activity in the fourth quarter of 1961.

The McGill vice president also said, "In our analyses of commodities, we find growing government intervention in industrial raw materials closely paralleling that in farm products. Unfortunately, many times politics are involved, clearly illustrated by the fiasco for aid to lead and zinc producers, which has received particularly strong political support from Western representatives.

"A year ago, Congress passed legislation authorizing direct subsidy payments to mining companies in order to keep them in business in the interest of national defense. President Eisenhower vetoed this bill.

"We now find that a duplicate is under discussion, but the controversial legislation is now bogged down in a Senate Committee, and it is doubtful that President

Kennedy will be given the opportunity to sign it."

Look for more government influence in commodity markets, which usually adds up to higher costs for raw material consumers, Sampson said. Under present conditions of stiff competition, not only between domestic producers but also from world producers, companies can no longer automatically pass on higher costs through increased selling prices, he noted. Thus any savings made in the cost of purchased materials will be directly reflected in a company's profit and loss statement.

Sampson summed up the overall economic picture with the following remarks:

- We are entering an era of unprecedented business activity.
- More raw materials will be needed to satisfy essential civilian needs.
- The impact of federal spending will account for an exceptionally heavy tonnage of metals, textiles, and leather as our Armed Forces are rebuilt closer to war strength.

Buyers' Market Can't Last

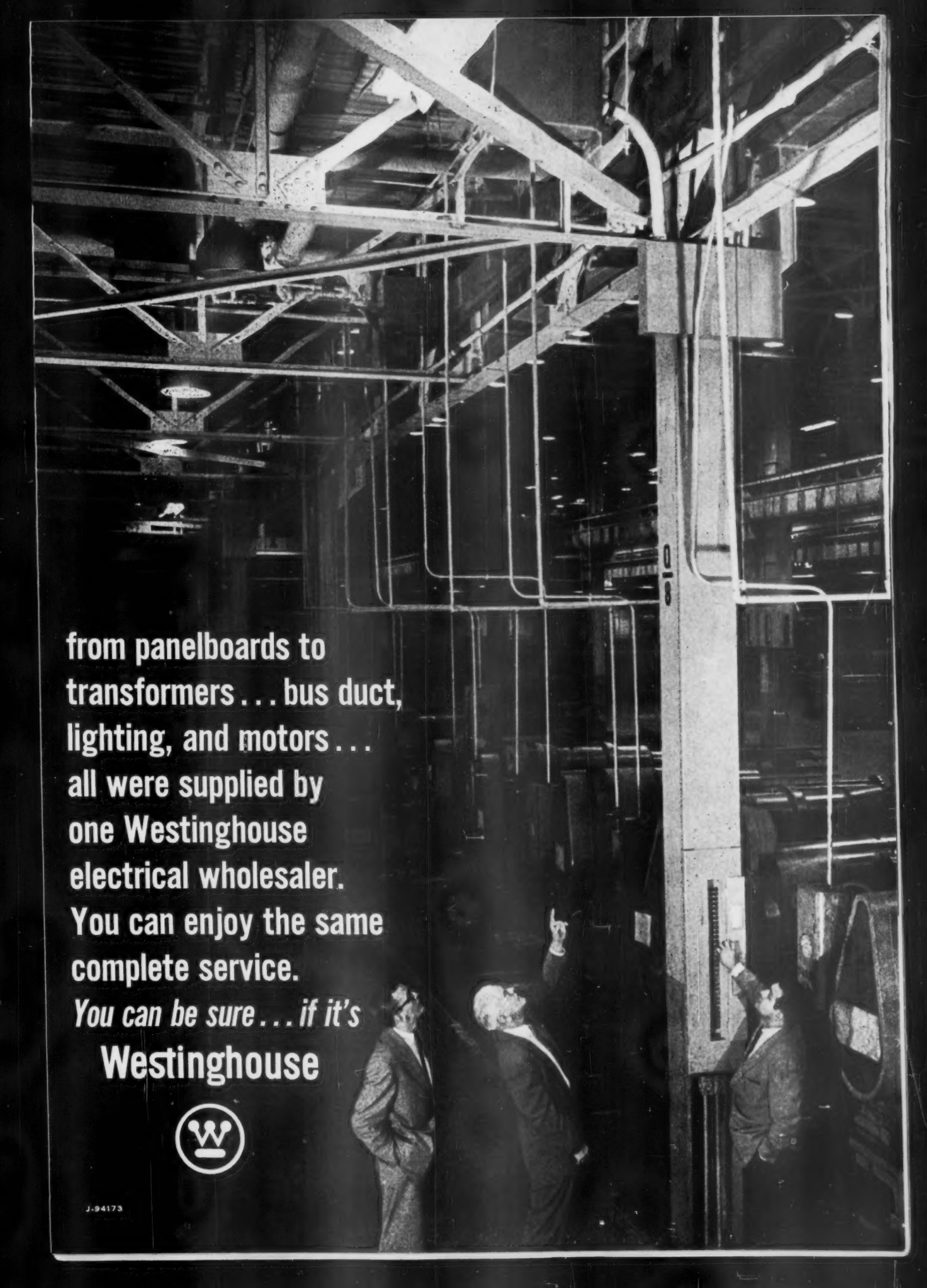
"With this background," he declared, "we cannot take it for granted that a buyer's market will prevail indefinitely. On an overall basis, production capacity is more than ample to meet demand, yet for purchasing executives to expect to carry on a higher volume of business and still maintain inventories on virtually a hand-to-mouth basis is imprudent and unrealistic.

"Inventories should be gradually accumulated, not in expectation of major profits through price appreciation, but as protection against slower deliveries. To obtain this ever-increasing volume of incoming material at competitive prices is the P.A.'s challenge in the months ahead."

Cleveland P.A.'s Develop Course For Engineers

Better relations between engineers and purchasing agents in the Cleveland area is bound to

(Please turn to page 170)



from panelboards to
transformers... bus duct,
lighting, and motors...
all were supplied by
one Westinghouse
electrical wholesaler.
You can enjoy the same
complete service.
You can be sure... if it's
Westinghouse



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Union-Camp now offers you 14 corrugated box plants

Fast service is no gamble when you deal with Union-Camp. Fourteen corrugated box plants are strategically located to supply all your corrugated packaging needs. Customized local service is combined with a comprehensive packaging evaluation program designed to assist you in specifications analysis, structural design, box testing, materials handling and graphic design.

Important reasons why more and more companies are turning to Union-Camp for creative help in packaging.



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†Benton Harbor, Mich.;

11th St. & Britain Ave.

†Monroe, Mich.; 1109 East Elm Ave.

†Eaton Rapids, Mich.; P. O. Box 8

*Baltimore, Md.; Eastern Box Co.;
Wagner's Point

*Jamestown, N. C.;

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*Subsidiary Companies †River Raisin Division

Questions from the floor



Are you getting most floor absorbent bulk (not weight!) for your money?

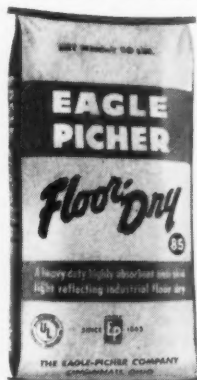
Does your floor absorbent become saturated before it does its job?

Does your floor absorbent create new hazards by absorbing light, thus reducing needed working light?

Does your floor absorbent "mud up" with oil and water?

THERE'S A TEST THAT ANSWERS ALL THESE QUESTIONS

In less than 15 minutes in your own office, you can get all the right answers scientifically. Our Eagle-Picher representative will bring a miniature laboratory right to your desk. Compare Eagle-Picher Floor-Dry with any other floor absorbent. See which wins out on overall economy and full-range safety. Eagle-Picher is eager to face comparative tests. Write today.



Since 1843

EAGLE-PICHER

The Eagle-Picher Company

Dept. P-1120, Cincinnati 1, Ohio

For More Facts Write No. 252 on Information Card—Last Page

Association News

(Continued from page 166)

result from a course sponsored jointly by the Purchasing Agents Association of Cleveland and the Cleveland Engineering Society.

The course, developed at the request of the engineering group, begins on December 12 and runs for eight consecutive Tuesdays (except for Dec. 26). Title of the new venture is "Securing Purchasing-Engineering Value."

Top purchasing executives from the Cleveland Association will present the principles and policies of purchasing to the engineers. H. A. Williams from Eaton Mfg. Co. will handle the opening session: "Objectives, Responsibilities and Relationship of Purchasing."

G. N. Hackett, Thompson Ramo Wooldridge, will discuss "Basic Purchasing policies."

The other meetings will be devoted to the general subject of "Purchasing Practices and Methods." It will include subtopics such as "Types of Commitments," "Bid Evaluation," "Value Analysis," "Vendor Relations," and "Testing and Inspection."

Four P.A.'s will handle this last phase of the course: D. W. Anton, Cleveland Electric Illuminating Co.; G. J. Harsch, Jr., Sohio; W. E. Gombert, Addressograph-Multigraph Co.; and J. D. Hogg, Cleveland Electric Illuminating Co.

The entire program was arranged by the Association's professional development committee headed by W. F. Eberle of Diamond Alkali.

No. Jersey P.A.'s Urged To Study Balance Sheet

It was ladies night at the opening meeting of the 1961-62 season of the Purchasing Agents Association of North Jersey, held at the Hotel Essex House, Newark, N. J.

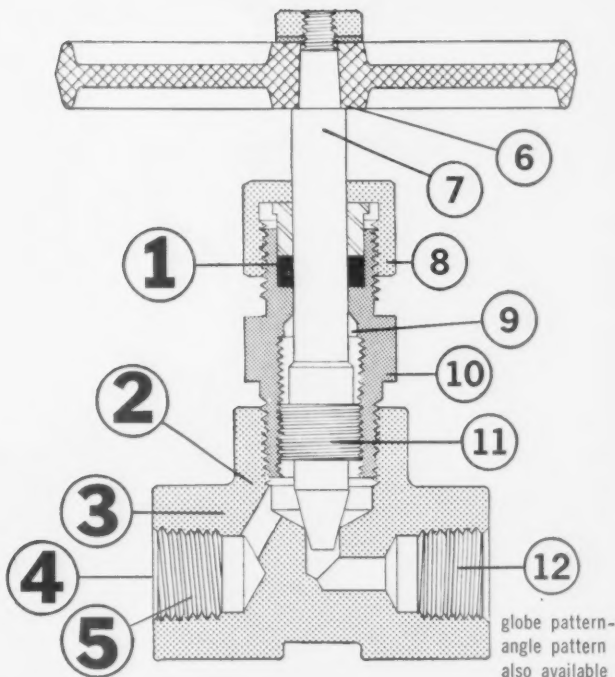
Miss Irene Gordon, Wallace & Tiernan—the first female chapter president in the N.A.P.A.—presided at the meeting. The New Jersey group heard a talk by Arnold Leeds, Bache & Company, entitled "Are You a Reason for a

(Please turn to page 172)

ENGINEERED FOR LONGER LIFE--

- 1** Teflon Packing — self lubricating; gives longer life; permits higher operating temperature; resilient, will not take permanent set under pressure, eliminates retightening.
- 2** Forged steel body — A-105-11 steel.
- 3** Phosphate coating — clean, overall protection.
- 4** Individually inspected — each valve cleaned of chips and foreign matter.
- 5** Pipe threads — leak proof; threads accurately cut and double-checked by Army-Navy gaging practice.
- 6** Handle — precision fit to stem.
- 7** Stem — extra-heavy #303 stainless steel; ground to close tolerance.
- 8** Sealant on Gland Nut — permanently tight.
- 9** Upper Seat — allows repacking under pressure while valve is in use.
- 10** Bonnet — power tightened so it cannot be accidentally disassembled.
- 11** Stem Thread — lubricated to prevent galling.
- 12** Pipe Openings — precision aligned for easy makeup.

**NOW... every fine quality
in one needle valve
globe or angle pattern.**

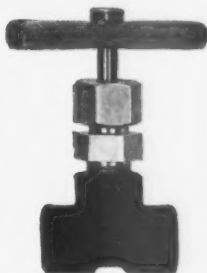


This new needle valve was made to **reduce maintenance**

Long, trouble-free life has been engineered into this CAPITOL forged steel needle valve.

Intensive study of forged steel needle valves in service showed the vulnerable points. CAPITOL combined proven design, quality materials and careful workmanship to produce a *superior* needle valve.

Packing problems are eliminated with miracle Teflon, recommended for temperatures to 450° F. Tight connections are assured by more pipe threads, double checked by Army-Navy gaging practices. All 12 major features, listed at the left, combine to insure worry-free service.



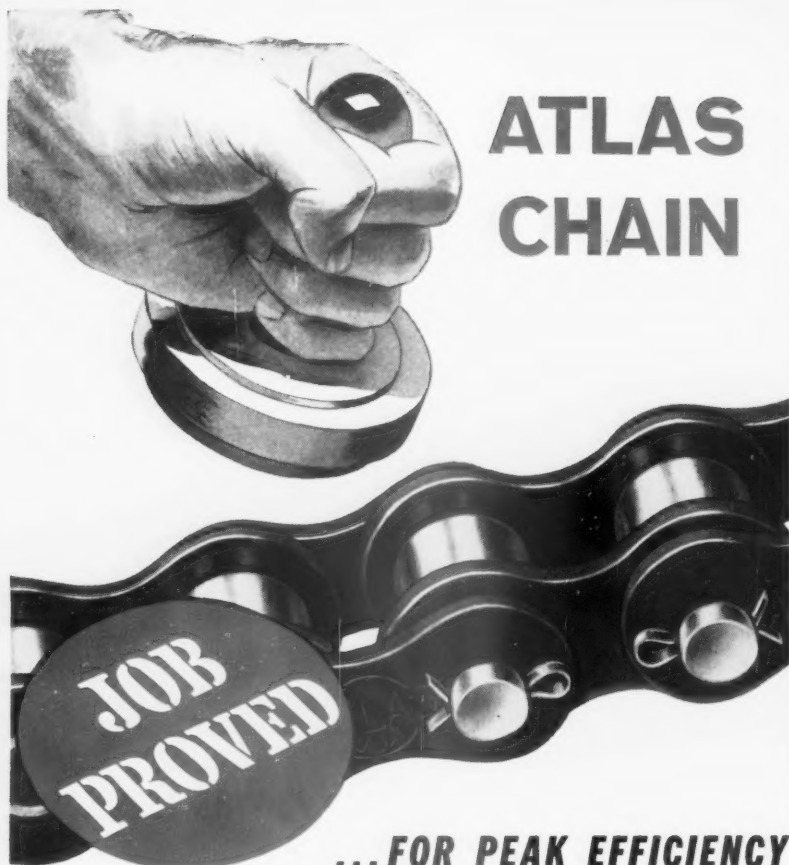
Service: Engineered for service in chemical, petrochemical and allied process industries. *Pressure Rating:* 5000 psi at 70° F. *Testing:* Each valve leak-tested at 100 psi; custom-testing to 10,000 psi upon request. *Sizes:* 1/8" thru 1/2".

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Division of Harsco Corporation,
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RECOGNIZED DISTRIBUTORS**

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**...FOR PEAK EFFICIENCY
ON EVERY INDUSTRIAL DRIVE**

- A. S. A. ROLLER CHAIN
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- MULTIPLE STRAND CHAIN
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- EXTENDED PITCH CHAIN
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- ATTACHMENT CHAIN
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Power drives . . . conveyor lines . . . control mechanisms . . . Atlas Chains have been "Job-Proved" on all kinds of drives in every type of industry. Proved and approved by millions of hours of actual performance runs to assure you of peak operating efficiency on your particular installation.

With Atlas Chain you are sure of unsurpassed quality at regular chain prices. Every length is made under rigid quality control methods . . . pre-tested in modern laboratories . . . proved on actual drives throughout industry. From tiny timers to rugged drives . . . from fractional horsepower motors to mighty giants . . . for conveying paper boxes or corrosive liquid containers . . . there's an Atlas Chain to fit your most exacting specifications.

On present machines or planned drives specify Atlas "Job-Proved" Chain for lower operating costs, less servicing and more production. For complete details and catalog contact your nearest Atlas distributor or write to . . .



ATLAS CHAIN & MANUFACTURING COMPANY
Subsidiary Prudential Industries, Inc.
WEST PITTSBURGH, PA.

ATLAS

For More Facts Write No. 254 on Information Card—Last Page

Association News

(Continued from page 170)

Profit or a Loss in Your Company?"

Leeds emphasized the key role a P.A. plays in determining his company's profit or loss. Stating that too few members of top management are sufficiently aware of the purchasing function or fully appreciate the purchasing agent, Leeds said the P.A. must convince his management that he is balance sheet conscious before he can achieve higher management status. A 1% net savings by a P.A. generates a 3% increase in net profits, according to Leeds.

The dinner meeting was preceded by a panel discussion on blanket orders. Chairman was Harold Zimmermann, Kearfoot division of General Precision, Inc. The all-girl blanket order panel was composed of Verna H. Downs, Eclipse Air Brush Company; Marie W. Klein, Rodic Chemical & Rubber Corp.; Ruth K. Boyd, Bell & Gossett Company; and Charlotte Kadushin, Federal Pacific Electric Company.

Sponsor Course for P.A.'s

The professional development committee of North Jersey also began its fall program. The committee is sponsoring a seven-week course designed to give a comprehensive view of the latest purchasing techniques.

Topics for the course include "The Scope and Responsibilities of the Purchasing Function," "Business Law and Its Relationship to Purchasing," "Communications and You," "Measuring Purchasing Performance," and "Integrated Data Processing and Its Application to Your Organization."

Charge for the course is \$15 to members and \$25 to non-members. The committee for professional development at North Jersey has Edward Blake, Upsala University, as chairman. Other members are: Louis Hill, Nopco Chemical Co.; Eric Schyling, Bendix Corp.; Norman J. McKinney, Peterson Bros. Mfg. Co.; Harry D. Moore, Breining Brothers; and Harry G. Koshak, Conmar Products Corp.



Purchasing Agents

Pick your form of Nickel...delivery date...time Your Inco Distributor will do the rest

You can count on your nearby Inco Distributor for "on time" delivery of the commercial forms of Inco Nickel best suited to your needs.

Your Inco Distributor understands how much your profits depend upon getting the materials you need... when you need them. That's why he's set up to supply Nickel *off the shelf*—right from his warehouse stock.

Pick your material...delivery date... time. Whatever the commercial form of Inco Nickel you need, your nearby Inco Distributor can supply you—in quantity.

Your Inco Distributor can help you beat the clock with "on time" deliv-

eries... and arrange for technical assistance that can help you solve your problems involving alloy selection. It will pay you to call him today.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street  New York 5, N. Y.

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NICKEL MAKES ALLOYS PERFORM BETTER LONGER

COMMERCIAL FORMS OF INCO NICKEL ARE DISTRIBUTED BY

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EAGLE METALS CO.—Spokane, Seattle, Portland

STEEL SALES CORPORATION—Chicago, Detroit, Milwaukee, Indianapolis, St. Louis, Minneapolis

METAL GOODS CORPORATION—Dallas, Denver, Houston, New Orleans, Tulsa, Memphis, St. Louis, Wichita, North Kansas City

WHITEHEAD METALS, INC.—New York City, Buffalo, Syracuse, Philadelphia, Baltimore, Harrison, N. J., Windsor, Conn., Cambridge, Mass.

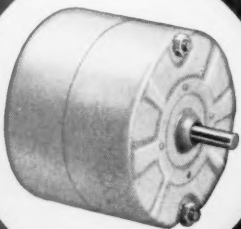
WILLIAMS & COMPANY, INC.—Pittsburgh, Cleveland, Cincinnati, Columbus, Toledo, Louisville

AC OR DC—FOR EFFICIENT, RELIABLE, LOW-COST POWER, SPECIFY LEECE-NEVILLE MOTORS

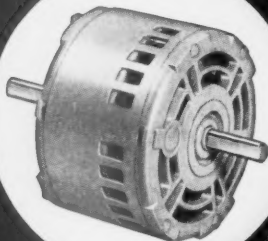
The world's largest independent supplier of fractional horsepower D.C. motors for automotive use also offers you a complete line of quality A.C. motors capable of meeting U.L. and C.S.A. application tests. Advanced design and modern manufacturing facilities assure peak performance and delivery to your schedules. Select a basic unit, let us help you adapt a basic unit, or we will custom-engineer a special motor to your requirements.

For information on A.C. motors, write The Leece-Neville Company, Dept. P-11, Georgia Division, Athens Highway, Gainesville, Georgia. For D.C. motor data, write D.C. Motor Div., Cleveland 3, Ohio.

A.C. Shaded Pole Motors — 2, 4 and 6-pole models with power range from 1/150 to 1/4 hp for use in blowers, fans, pumps, air conditioners, ventilators, etc.



A.C. Permanent Split Capacitor Motors — 4 and 6-pole models from 1/15 to 1/3 hp for use in blowers, room air conditioners, heating units, condenser fans, etc.



D.C. Motors — Complete line of 6, 12, 24, 32 and 110 volt motors with single or 2-speed and reversible options. Leece-Neville custom-engineers more than 300 special D.C. motors every year.



For More Facts Write No. 256 on Information Card—Last Page

Program Aids

To assist program chairmen in planning association meetings and company conferences, available film and other program aids will be listed in these columns from time to time.

"Rice Bowls To Rockets"—A 30-minute color and sound film which traces the history of gray iron castings. This is the first in a series of films to be produced by the Gray Iron Founders' Society. Films are available without charge from: Donald H. Workman, executive vice president, Gray Iron Founders' Society, National City-East Sixth Bldg., Cleveland 14, Ohio.

"Profile of a New Concept"—Sound, slide film which explains how long wheel base and proper weight distribution of fork trucks contributes to maneuverability and driver comfort. Viewing time is 20 minutes. For print, free on loan, write to: Slide Film Department, Industrial Truck Division, Clark Equipment Co., Battle Creek, Mich.

"Crossroads, U.S.A."—A film that states the case for competitive, privately managed business and shows the real significance of the American way. Sound, color, either 16mm or 35mm. Running time: 25 minutes. Free on loan from: American Petroleum Institute, 1271 Avenue of the Americas, New York 20, N. Y.

"Harnessing Liquids"—Explains the theory of hydraulics and shows how hydraulic power is used to operate various machines and equipment. It is a 16mm, sound, black and white film with a running time of 12 minutes. Free on loan from: Shell Oil Company, 50 West 50th St., New York 20, N. Y.

"Space Building For Man"—Story of glass as it is used in the building industry, particularly in curtain wall construction. The film is in color and is available, without charge, from Libbey-Owens-Ford Glass Co., 811 Madison Ave., Toledo 1, Ohio.

Look to **FAFNIR**

for
miniature
ball bearings
of extra-clean
vacuum-melt
steel

Seconds after countdown, a microscopic pit in a miniature bearing could ground the most carefully planned space shot. To eliminate pits and other imperfections, Fafnir helped pioneer miniature ball bearings of vacuum-melt stainless steel. This "extra-clean" steel is completely free of impurities, and makes for flawless bearing performance. Look to *Fafnir* for leadership in ball bearings. The Fafnir Bearing Company, New Britain, Connecticut.

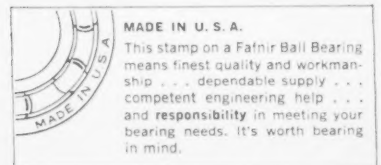


FAFNIR
BALL BEARINGS

Look to **FAFNIR**

for
cobalt-base
alloy
ball bearings
that withstand
high
temperatures

Air bled from jet engines comes through *hot*. And the pressure is tremendous. For ball bearings that can stand these jet-hot heats and jet-high pressures, Fafnir turned to cobalt-base alloys. These "exotic" Fafnir bearings are ideally suited for turbo-drive butterfly valves and similar high temperature, high load applications. Look to *Fafnir* for leadership in ball bearings. The Fafnir Bearing Company, New Britain, Connecticut.



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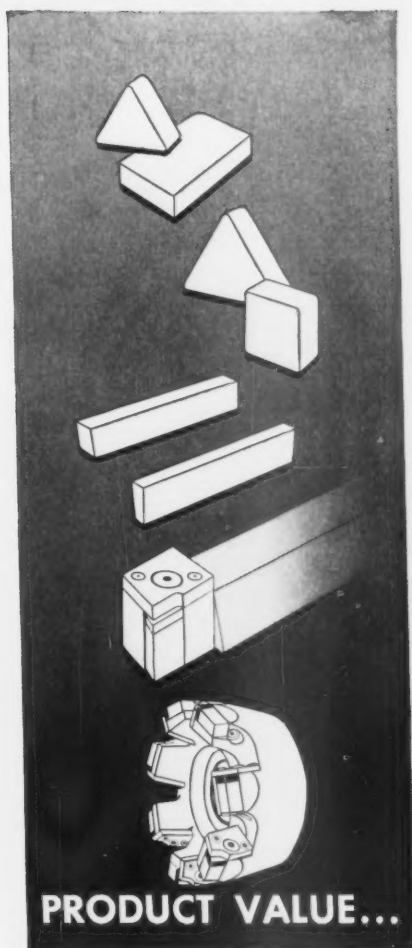
**THE FAFNIR BEARING COMPANY
NEW BRITAIN, CONNECTICUT**

Our ball bearing problem is ☐ Noise ☐ Corrosion
☐ Miniaturization ☐ Heat, Other:
We'd like to talk it over with you and get Fafnir's ideas.

Name
Position
Company
Address
City Zone State

FAFNIR

BALL BEARINGS



FIRST CHOICE of more and more industries

VASCOLOY-RAMET cutting tool materials — cemented carbides, Tantung cast alloy and ceramic — meet the rigid standards of quality demanded by the uncompromising requirements of Value Analysis. Proven superior by every point of comparison, V-R products — blanks, inserts, tools, toolholders and face mill cutters — provide increased production with better size control and finish. Years of research, comprehensive testing and field service are behind every product manufactured at V-R.

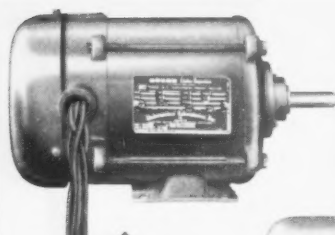
VASCOLOY-RAMET provides added benefits . . . one-source responsibility for cemented carbide, cast alloy and ceramic cutting tools . . . plus reliable on-time delivery backed by strategically located reserve stocks. V-R expert counselling brings about increased efficiency, improved productivity and greater operating profits on your metal cutting operations. Contact your V-R representative for help on all these important points. **VASCOLOY-RAMET CORPORATION**
892 Market Street, Waukegan, Illinois



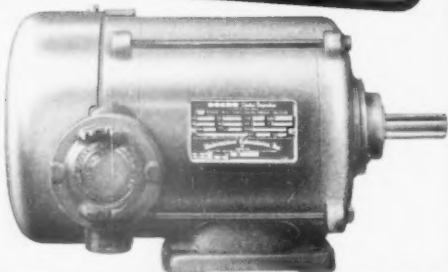
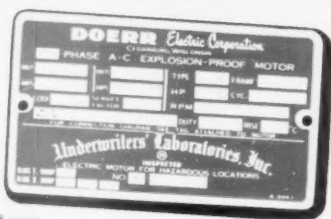


APPROVED
**EXPLOSION-
PROOF
MOTORS...**

*readily
available*
AT DOERR!



(Above) 56 frame; ¼ hp.
to 1½ hp. at 3450 r.p.m.



(Right) 184 frame; 1 hp. to
3 hp. at 3500 r.p.m.

NEMA frame sizes 56-182-184 in stock

YOU ALWAYS GET prompt service on explosion-proof motors at Doerr!

Standard designs are carried in stock and listed in the Doerr Condensed Catalog—even NEMA Type C face-mounted models for pumps, gearmotors and other close coupled applications. Fast completion of quantity orders is assured by Doerr's modern, expanded plant facilities.

BROAD RANGE OF MODELS

Doerr explosion-proof motors are readily available in NEMA frame sizes 56 and 66, with ratings from ¼ hp. to 1½ hp., 3450 r.p.m., and in frame sizes 182 and 184, with ratings from ½ hp., 860 r.p.m., to 3 hp., 3500 r.p.m.

These motors are also offered with explosion-proof, motor-mounted brakes, as torque motors and in fan duty designs. Some 56 frame motors can be furnished with resilient mountings if desired.

Single phase explosion-proof motors

are streamlined in a good-looking, compact design with the capacitor concealed inside the frame.

U.L. APPROVED DESIGN

Doerr's basic explosion-proof designs are approved by Underwriters' Laboratories, Inc., for hazardous atmospheres including Class I, Group D (petroleum and alcohol vapors), and Class II, Group E (magnesium dust), Group F (coal and carbon dust) and Group G (grain dust).

Also, worthwhile cost savings are often possible if your motors must meet only one of these service conditions rather than all.



WRITE FOR 14-PAGE CONDENSED CATALOG

...and motor "idea book". Shows many SPECIAL DESIGNS... gives dimensions and price data on STANDARD MOTORS. Write on your company letterhead.

DOERR ALSO OFFERS

- Standard and special motors in a broad range of fractional and integral hp. ratings.
- Drip-proof and totally enclosed types.
- Face-mounted and flange-mounted models; brakemotors.
- Right angle gearmotors to 5 hp.
- Full cooperation on specials—in any quantity.



Phone: DRake 7-0500

90 N. FOURTH AVENUE • CEDARBURG, WISCONSIN

For More Facts Write No. 259 on Information Card—Last Page

Industry Developments

Pittsburgh Standard Conduit Co. has announced it will build a plant in Gilmer, Texas. Production will start in February 1962 and the plant will be the fourth conduit facility for the company. Other mills are in Verona, Pa., the company's general headquarters, Morrisville, Pa., and Houston, Texas.

Associated Testing Laboratories, Inc., will soon start construction on a 32,000 square foot addition to its present 30,000 square foot plant in Wayne, N. J. This expansion is necessary to accommodate the rapid growth in demand for the company's environmental testing services and environmental test chambers. The 62,000 square foot plant will provide increased space for both the testing and manufacturing divisions.

Associated Testing Laboratories, with headquarters in Wayne and regional laboratories in Winter Park, Fla., and Burlington, Mass., provides facilities for the environmental testing of missile, rocket and aircraft components, and is a manufacturer of environmental test equipment.

The Carpenter Steel Company announces that construction has started on a new cold rolled strip mill building at its West Shore property in Reading, Pa. The new facility will replace and increase the existing cold rolling capacity at the Reading plant.

National Starch and Chemical Corporation recently announced that land has been purchased on which to build a 4 million dollar vinyl acetate plant. The annual capacity of the new chemical facility will be 45 million pounds, most of which will be for captive use.

The site selected is at Seadrift, Texas, and construction will start late this year. The plant is expected to be in operation late 1962.

SERVICE IN STAMPINGS

"ONE PLUS" METHOD	SHORT RUN METHOD	PRODUCTION RUN METHOD	"WATCH DOG" SERVICE
Applies when you need just a few pieces for prototypes or experiment. We hold all critical dimensions, yet avoid tooling charges.	More than "a few," but less than production quantities. Temporary tooling, simple dies and special presses keep costs down.	Applies when quantity, tolerance, size and contour factors justify our standard production tooling and/or nominal die charges.	A routine procedure. We re-evaluate repeat orders as to quantity and specs—then use the Method best for you.



SELECTION OF SERVICE MEANS BETTER STAMPED METAL PARTS

The Services displayed and briefly described in the chart above permit selection of the exclusive cost-cutting and quality-controlled techniques best suited to your specs and quantity requirements. *You specify and we deliver.* This definition of ideal Stampings production is the result of specialization in stamping since 1913.

With *Service in Stampings* you get top quality Stamped Metal Parts (1) in any size, any shape, ranging from tiny lock washers to elec-

tronic chassis to husky rocker arms . . . (2) in any quantity, from a single prototype to a million or more . . . (3) all within accepted tolerances and finishes for the class of work involved . . . (4) at surprisingly low cost.

So . . . for better Stamped Metal Parts, faster and at low cost, call DAVIS 5-2631 or send your prints for quotes directly to the . . .

LAMINATED SHIM COMPANY, INC.,
2411 Union Street, Glenbrook, Conn.

For More Facts Write No. 260 on Information Card—Last Page

Industry Developments

AeroChem Research Laboratories, Inc., a subsidiary of **Pfaudler Permutit Inc.**, broke ground recently for a new laboratory to be located on **Ridge Road, Monmouth Junction, N. Y.** The building of 10,000 square feet floor space will double the company's laboratory area, and will house a library, offices for senior research personnel, and laboratories for sixty people. Construction will begin shortly and is expected to be completed by mid-April 1962.

FMC Corporation (formerly **Food Machinery and Chemical Corporation**) will build a new multimillion-dollar plant to produce toluene diisocyanate, a major component of polyurethane plastics. Capacity figures are not available at this time because the company is exploring the possibility of forming a partnership in connection with this new venture.

The plant facility will be built

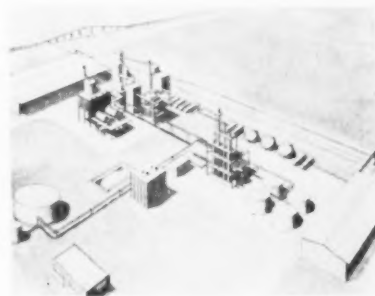
on the site of the former Naval Ordnance plant in **Charleston, West Virginia**. It adjoins the company's large chlorine-caustic plant which will provide a substantial portion of the raw materials needed for producing the new chemical. Construction of the toluene diisocyanate plant will start spring 1962, with initial operation scheduled for late 1963.

A new **Plastics Division** has been established by **Imperial-Eastman Corporation, Chicago, Ill.**, manufacturers of hydraulic and pneumatic components. The new division will be housed in the company's **Manitowoc, Wisc., plant**, and will manufacture a broad range of plastic hose and tubing for pressure applications up to 3,000 p.s.i.

The new headquarters and plant of **The Multi-Amp Electronic Corporation at Cranford, New Jersey**, are now in operation.

The company designs, engi-

neers, manufactures and sells portable field and laboratory equipment for testing and calibrating current and voltage-actuated devices; as well as products for the Defense Department.



Further expansion of **Kaiser Aluminum & Chemical Corporation** manufacturing and marketing operations in the chemical industry was announced recently.

The corporation is undertaking the immediate construction of a \$6 million plant for the production of hydrogen fluoride and fluorocarbons. It will be built adjacent to the present alumina and caustic-chlorine plants at the

Buying LAMINATED PLASTICS... as sheet,



TAYLOR FIBRE CO. BELONGS AS AN APPROVED SUPPLIER

Taylor has the products... offers more than 50 grades of industrial laminated plastics... including paper, cotton cloth, nylon, asbestos, glass cloth, or other base material impregnated with phenolic, melamine, silicone or epoxy resins and formed into sheets, rods and tubes under heat and pressure. Also a number of composite materials, including copper-clad laminated plastics, vulcanized fibre and laminated plastics, rubber and laminated plastics, asbestos and laminated plastics, and aluminum and laminated plastics.

Use this Taylor Selection Guide to make selections of the Taylor laminated plastics that will fit your requirements.

corporation's **Gramercy, Louisiana**, works.

This expansion will provide the company with facilities from which to supply their own requirements and also enable them to offer large tonnages to the industrial chemical market.

The fluoride plant at Gramercy will be integrated with an aluminum fluoride plant which has been previously announced, and operations are scheduled for the latter part of 1962. Distribution and technical services are being established to market the hydrogen fluoride and fluorocarbon products which will be available for sale from the new plant.

Pittsburgh-Des Moines Steel Company announces it has completed the expansion of its **Birmingham** plant, providing PDM with the required increased facilities for handling future defense and industry contracts.

The added floor space will be used for fabrication of elevated tanks and flat bottom tanks—ade-

quate now to meet the anticipated requirements for the entire southeast section of the country. It also provides more space for shop assemblies required for specialized industrial work. It is expected full capacity will be possible before the end of the year.

Production of **Allis-Chalmers** engines has started in a new 515,000 sq. ft. engine manufacturing facility recently completed at the company's **Harvey, Ill., Works**.

Erected on 35 acres the company owns in the Village of Phoenix, the 440 x 1,100 sq. ft. steel and concrete structure provides modern production equipment together with the latest production techniques. These combine with the many other modern facilities to give the company an automotive-type straight line production system under which material is fed into the line at one end of the building to emerge as a completely assembled engine at the other end, ready for the final test prior

to shipment.

Engines produced at the Harvey Works are primarily used in many Allis-Chalmers products, but, in addition, Allis-Chalmers engines continue a source of power supply for the commercial engine markets, including the construction and logging industries, oil fields, for irrigation, the marine trade, and industries requiring stationary and portable electric sets.

The chemical department of **McKesson & Robbins, Inc.**, is to build facilities for two chemical branches. One will be opening in Little Rock, and new facilities will be built for the company's San Antonio Branch.

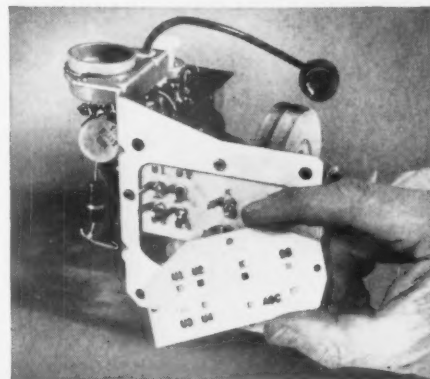
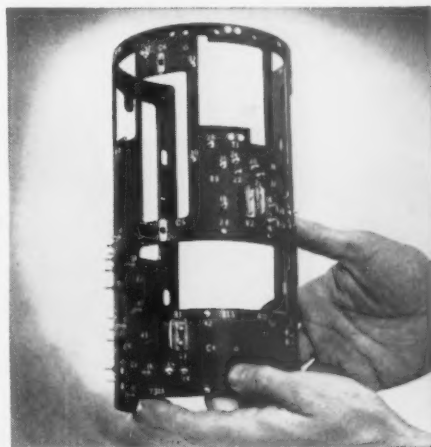
The company has bought land in the new **Little Rock Industrial District**, east of **Scott Hamilton Drive** and new facilities for the San Antonio Chemical Branch will be built at the northwest corner of **Director Drive and Ambassador Row** in the **Eastwood Industrial Park**.

rod, tube or fabricated parts?

Taylor has the facilities. Its Norristown, Pa., plant, comprising some 300,000 sq. ft., produces both laminated plastics and vulcanized fibre . . . is one of the most completely integrated in the industry . . . even makes its own paper and a large percentage of its own resins. The La Verne, Calif., plant, with over 45,000 sq. ft. of floor space, specializes in the manufacture of laminated plastics for the convenience of West Coast customers. And both plants can fabricate parts from any Taylor materials to specifications, economically.

Taylor laminates offer many advantages over metals. They have a higher strength-to-weight ratio, are corrosion resistant, and can be fabricated more easily. This Taylor Selection Guide will help you evaluate the different grades available. Write for your copy today. Taylor Fibre Co., Norristown 36, Pa.

For applications requiring high strength retention at elevated temperatures, Taylor Grade GEC—an epoxy resin, glass fabric base material.



For high-temperature electrical applications and high-frequency radio equipment, Taylor Grade GSC—a silicone resin, glass fabric base material. Has high heat resistance, excellent electrical properties, and high arc resistance. Will not support combustion.

Taylor
LAMINATED PLASTICS VULCANIZED FIBRE

For More Facts Write No. 261 on Information Card—Last Page



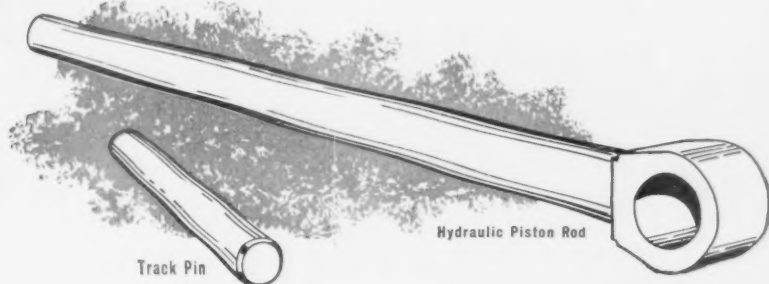
COLD FINISHED STEEL BARS PROVIDE THE MIGHTY MUSCLES FOR AMERICA'S MOBILITY

America can't move without cold finished steel bars. Every automobile, truck, train, airplane and the equipment that builds the arteries on which they travel, depends on cold finished steel bars.

Take this rugged front-end loader. The hydraulic piston rods—the muscles through which tremendous power surges—are made from the finest cold finished steel bars produced by Bliss & Laughlin. Turned, Ground and Polished bars, precision-made, chrome-plated, strong, hard, straight, free of nicks and scratches, assure a tight, flowing fit against cylinder packings.

Scores of pins made of strong and dependable Bliss & Laughlin cold finished steel bars join crawler track units. Control rods, fittings, fasteners, shafts and studs, among other components, employ various types of Bliss & Laughlin steel bars.

For over 70 years, Bliss & Laughlin has been supplying cold finished steel bars to keep America on the move. Producing the industry's most extensive line of cold finished steels, seven mills across America, collaborating with Steel Service Centers everywhere, assure prompt, helpful, local service.



The chrome plated hydraulic piston rods may be produced from Turned, Ground and Polished C-1144 Strain-Tempered,[®] C-1045 Lusterized, carbon restored, induction hardened, or alloy grades. The track pins illustrate another type of analysis —C-1050 Lusterized, which may be carbon restored and induction hardened. Bliss & Laughlin can always furnish the most suitable steel for your field service and machining requirements.

Leading
Independent Producer
of Cold Finished
Steel Bars



**BLISS &
LAUGHLIN**

GENERAL OFFICES: Harvey, Ill. MILLS: Harvey, Ill., Detroit, Cleveland, Buffalo, Mansfield, Mass., Los Angeles, Seattle

For More Facts Write No. 262 on Information Card—Last Page



This is the cooler that pioneered a trend

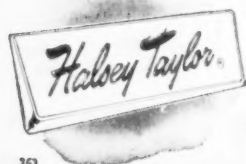
Just a little over a year ago no one ever saw a cooler like this. We call it the Wall-Mount, truly a Halsey Taylor first.

It mounts on the wall... no exposed fittings, no space behind cabinet to catch dirt or grime! Off the floor... room underneath for easy cleaning! The answer to maintenance-free installation and, like all Halsey Taylor fixtures, gives years of trouble-proof service.

The Halsey W. Taylor Co., Warren, Ohio



The Wall-Tite, big brother to the Wall-Mount. Fits tight to the wall.



Write for latest catalog, or see Sweet's or the Yellow Pages

THIS MARK OF LEADERSHIP IDENTIFIES THE MOST COMPLETE LINE OF MODERN DRINKING FIXTURES

For More Facts Write No. 263 on Information Card—Last Page

News

New Non-Magnetic Alloy Has Wide Application

A new class of non-magnetic alloys—a combination of titanium and nickel—has been developed by the Naval Ordnance Laboratory in Silver Spring, Md.

The alloy, called Nitinol, is corrosion resistant and can be hardened to 62 Rockwell "C"—almost the hardness of tool steel. In contrast to other alloys, its toughness increases as temperatures decrease, yet it is suitable for use up to about 1200 degrees F.

Nitinol has a potentially broad range of applications. For example, the marked changes in mechanical vibration damping characteristics that accompany temperature changes indicate a possible use in temperature sensing devices.

The Nitinol series consists of TiNi and its associated phases Ti_2Ni and $TiNi_3$. The most phase-pure TiNi composition was found at about 54.5% nickel by weight.

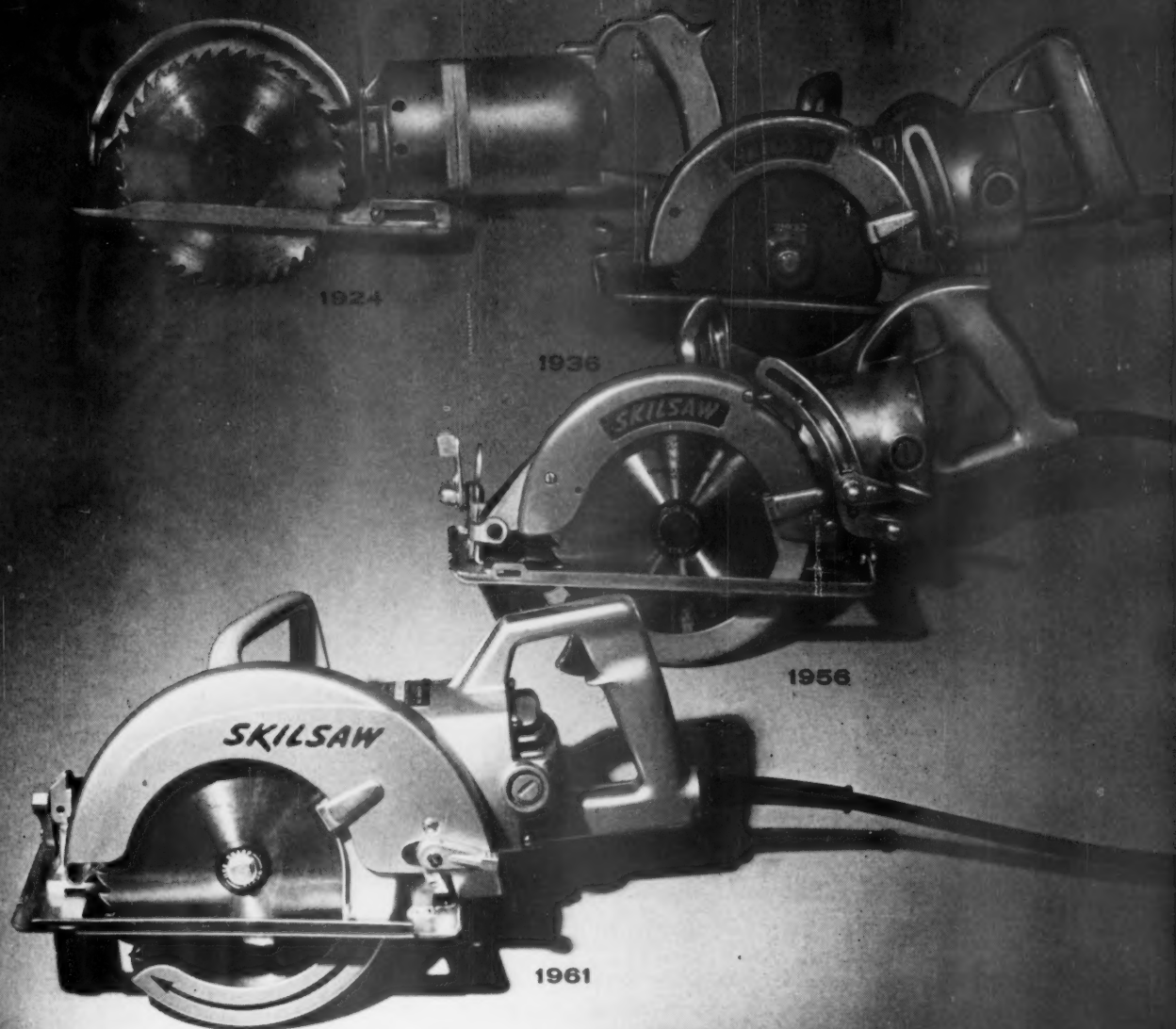
The material has a specific gravity of 6.45. This means that it offers strength without adding weight to aircraft, tool, or other applications. It also resists oxidation, can be welded easily, and resists abrasion.

New Cube Rate Tariff Favors Small Shipments

REA Express is continuing its efforts to recapture more of the small shipment market by extending its new, shipper-loaded small container service to 35 cities. The service was introduced last summer.

Because of favorable shipper response to the new container service, the company published small-container Commodity Tariff 52, scheduled to be effective this month, if it is not suspended by the Interstate Commerce Commission. Motor carriers and freight forwarders, however, have registered vigorous objection to the new tariff.

Under the system—which REA (Please turn to page 186)



Now! Best Skilsaw models in 36 years!

with new "Burnout Protection" motors, backed by full year FREE service policy!

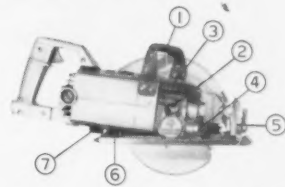
Take it from us—you simply can't afford *not* to use these newest versions of world famous Skil worm-drive saws, they're that much better!

12 major improvements. To start with, we took the finest Skil power saws ever made (the 6½" Model 367, 7¼" Model 77 and 8¼" Model 825) and gave them new B-P motors that give "Burnout Protection" even during frequent, excessive overloads. Next, we made oil level control and oil pressure relief automatic. Then we added a new airflow

hood for better cooling, and the convenience of an easier-to-read bevel gauge and a telescoping blade guard that can't bind even on trickiest miter cuts.

The list of improvements goes on and on to make these, unquestionably, the finest saws ever to carry the name "Skilsaw" . . . and that's saying a lot!

Ask your Skil distributor for more information, today. Look under "Tools-Electric" in the Yellow Pages. Or write: Skil Corporation, Dept. 125K, 5033 Elston Avenue, Chicago 30, Illinois.



(1) New plastic-covered top handle for cooler handling. (2) Automatic oil level control. (3) New air flow hood. (4) Push-button blade lock. (5) Easy-to-read bevel gauge. (6) Stronger steel foot. (7) New sawdust ejector system.



...and **SKILSAW POWER TOOLS**

For More Facts Write No. 264 on Information Card—Last Page



LESS LINER, MORE COATING, BETTER PROTECTION, LONGER WEAR . . . NORTH PVC GLOVES

These features, combined with better fit, more comfort, greater dexterity, and maximum resistance to chemicals, oils, greases, etc., mean lower coated glove costs, higher worker output.



For outstanding hand-to-shoulder protection with an uncoated material, insist on Jomac terry cloth gloves, hand guards, pads, mitts and safety sleeves. The loop-pile fabric is long-lasting, cut, abrasion and heat-resistant—and washable.

To keep dry, comfortable and safe in foul weather, insist on North PVC Wet-Weather Clothing . . . tough, flexible, nonaging, waterproof, resistant to abrasion and most oils, greases and chemicals. Available in high-visibility safety yellow.



**WRITE TODAY FOR FOLDER DESCRIBING THESE
OUTSTANDING PROTECTIVE PRODUCTS BY JOMAC**

JOMAC

Jomac Inc., Dept. F
Philadelphia 38, Pa.

In Canada: James North Canada Company Ltd., Simcoe, Ont.

"JOMAC Sells Quality . . . and Quality Sells JOMAC!"

For More Facts Write No. 265 on Information Card—Last Page

News

(Continued from page 184)

Express calls "Unit-Pak"—a flat charge is assessed regardless of the commodity or mixture of commodities in the container. One-hundred-and-one cubic foot containers, which will hold up to 3,000 pounds, will be supplied to shippers without charge.

Permits Partial Delivery

Some illustrative container rates from Cleveland are: to New York City, \$48; to Chicago, \$40; and to Los Angeles, \$137. If more than one container is used in the shipment, a lower charge will be assessed for the extra unit.

Purchasing agents can take advantage of a tariff provision which permits partial delivery to as many as ten addresses located within the delivery limits of the destination city, at an additional charge.

Although the containers are now made of wire mesh, company officials visualize shippers designing their own containers. For example, containers could have solid sides or be equipped with shelves, drawers, or racks to fit particular needs.

Since rates are based on the cube rate principle—with the shipper paying for weight and space regardless of the value or transportation characteristics of the items—the new system will be particularly attractive to manufacturers of high rated merchandise.



"You can't go on at this rate of speed week after week, Buxton. You'll have to set a faster pace for yourself."

When should you use Mercury-Wetted Contact Relays?



IF YOUR RELAYS
MUST

SWITCH UP TO
100 TIMES
PER SECOND

HAVE A LIFE
IN EXCESS OF
A BILLION
CYCLES

BE COMPLETELY
RELIABLE
AND FREE FROM
CONTACT BOUNCE

THEN SPECIFY
P & B
MERCURY
WETTED
CONTACT RELAYS

An unusual combination of advantages found only in mercury-wetted relays has led many design engineers to specify them for tough switching jobs. Here are but 3 typical characteristics of our JM series:

RELIABILITY. Sealed-in-glass mercury contacts are renewed with every operation. Won't pit or weld. Make or break is positive . . . every time. No bounce, no chatter. Signals ranging from a few micro amps to 5 amps are switched with singular consistency.

LONG LIFE. Think in terms of *billions* of operations when considering JM series relays. Proper application, of course, is a requisite.

SPEED. Operate time is just less than 3 milliseconds using 2 watts of power. Release time is about 3.2 milliseconds. Thus, relays can be driven 100 times per second.

If your project calls for exceptional relay performance, perhaps the answer lies in our JM Mercury-Wetted contact relay.



JM SERIES ENGINEERING DATA

Contact Rating:

5 amperes maximum
500 volt maximum
250 volt-amp max. with required contact protection.

Contact Configuration:

Each capsule SPDT. Combination of capsules in one enclosure can form DPDT, 3PDT, 4PDT. (All Form D.)

Terminals:

Plug-in or hook solder; 8, 11, 14, or 20-pin headers.

Coil Resistance:

2 to 58,000 ohms.

More information?
Write today for free catalogue.



P & B STANDARD RELAYS ARE AVAILABLE AT YOUR LOCAL ELECTRONIC PARTS DISTRIBUTOR



POTTER & BRUMFIELD

DIVISION OF AMERICAN MACHINE & FOUNDRY COMPANY • PRINCETON, INDIANA
IN CANADA: POTTER & BRUMFIELD, DIVISION OF AMF CANADA LIMITED, GUELPH, ONTARIO

GAYLORD researches out the failures

You can't afford to experiment: the wrong kind of shipping container can cost you hours, customers and dollars.

So Gaylord packaging research engineers experiment for you with the complete box, liners, adhesives, interior design—the works. Every Gaylord container that you get is *proven*.

Does your product need a better container? Call your nearby Gaylord Man. Let him and Gaylord Research go to work for you now.



CROWN ZELLERBACH CORPORATION
GAYLORD CONTAINER DIVISION



IN CANADA • CROWN ZELLERBACH
CANADA, LTD. VANCOUVER, B. C.

HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

For More Facts Write No. 258 on Information Card—Last Page



It takes arms of sheet steel for this fruit-tree shakedown

They don't pick fruits and nuts nowadays. Instead, a sturdy tractor-mounted boom reaches up, clasps an 8-inch limb in a cushioned grip, and shakes down every walnut, plum, or cherry.

It's a job made to order for strong, lightweight sheet steel. This hydraulic boom, made by Gould Bros., Inc., San Jose, California, is made from 10-ga sheets of Bethlehem's Mayari R high-strength, low-alloy steel. Because of its high yield point, Mayari R sheet steel

reduces deadweight while maintaining strength and impact resistance in the boom.

Whatever your product, it makes sense to design and work with sheet steel. Bethlehem can furnish the sheets you need for the job, in a wide variety of gages, tempers, and surface finishes. Let's talk it over soon. Our nearest sales office will give you prompt assistance.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Sales: Bethlehem Steel Export Corporation



for Strength
... Economy
... Versatility

BETHLEHEM STEEL

For More Facts Write No. 268 on Information Card—Last Page



Just One **RIGGID**[®]

3-WAY PIPE THREADER

Threads All 3 Popular Conduit Sizes!



No. 30-A threads $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ ".

No. 31-A threads $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1".

Here's an extra-sturdy threader that's instantly ready to thread any of the three conduit sizes most used. Each die-set is locked in place . . . can't get lost. Yet dies are easy to reverse for close-to-wall threading. Centering guide keeps conduit straight for true-threads every time. Twin handles double leverage for easy thread cutting. Choice of long-wearing alloy or high-speed steel dies. Straight conduit dies also available.

Call your distributor today. For your convenience he maintains a complete stock of RIGGID Work-Saver Pipe Tools and parts.

RIGGID

The Ridge Tool Company, Elyria, Ohio, U.S.A.

For More Facts Write No. 269 on Information Card—Last Page

Book Review

Industrial Marketing (Rev. Ed.)

By Ralph Alexander, James Cross, and Ross Cunningham

Richard D. Irwin Inc.

\$10.60

As the target of most industrial marketing efforts, the purchasing executive has a special interest in the how and why of the subject. This book covers all phases of industrial marketing including marketing management, market research, product planning, marketing channels, advertising and sales techniques, management of physical distribution, and special marketing problems such as reciprocity.

Purchasing agents should be particularly interested in the section that deals with sales techniques (perhaps they can offer a few tips to the salesmen who call on them). According to the authors, the "average buyer likes the salesman to make a presentation of his products." The salesman can also "warm the buyer's welcome by making himself a valuable source of market information. He should report price information, including price changes, promptly and accurately. . . . The industrial salesman should be alert to advise and help the customer in selecting the right materials or equipment. It is sometimes wise for him to seek to dissuade a buyer from ordering an article which will not satisfactorily meet the latter's needs."

P.A.'s who read *Industrial Marketing* will have a reasonably objective measure of the salesmen who call on them.

Roleplaying in Business and Industry

By Raymond J. Corsini, Malcolm E. Shaw and Robert R. Blake

The Free Press of Glencoe, Inc. \$6.00

The play is the thing in business as well as in the theater say the authors of this book. Credit for developing roleplaying, they say, be-

(Please turn to page 192)

inside/outside

WHEN THE PROBLEM IS CORROSION

**count on
Anaconda
hose
of Teflon**

If you're faced with the problems of corrosive atmospheres or of conveying corrosives, specify hose of Teflon* by Anaconda. These rugged, resilient connectors are being used to convey chemicals, steam, hot water, fuels, air, gas, liquids, semi-solids, and have proved the ultimate in durability and dependability. They are lightweight, flexible and serviceable at temperatures from -65°F to 450°F .

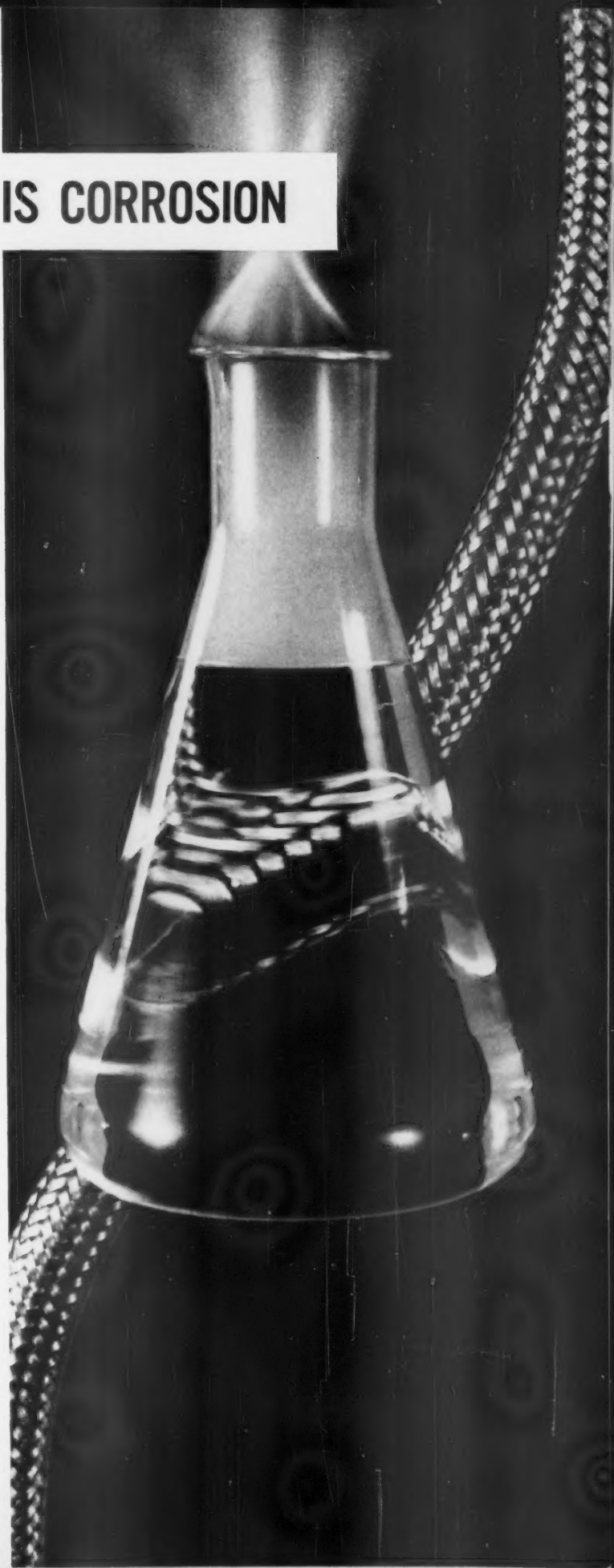
Whenever you have a connector problem, consult Anaconda. Select from hose in a wide variety of metals and materials meeting every requirement. Fast delivery from local distributor stocks. For more information write: Anaconda Metal Hose Division, Anaconda American Brass Co., P.O. Box 791, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

61-939

*Teflon is a DuPont trademark

ANACONDA[®]
METAL HOSE DIVISION

For More Facts Write No. 270 on Information Card—Last Page



"Call FOSTER for pipe PLUS"



When you order pipe from Foster you get several big "pluses" in service and savings.

First, Foster warehouses always stock the exact pipe you want, in any quantities—lengths or carloads.

Second, you get big savings as a result of lowest possible material costs through single-source buying, combination shipments, and lower freight rates from Foster's strategically located warehouses.

Third, delivery is always "Faster From Foster."

Foster's nationwide warehouses carry complete stocks of every standard item of Tested Pressure Pipe 1/8" thru 42", including hard-to-get Large OD's, Heavy Walls, and Seamless Carbon Pressure Pipe. We can also supply a complete range of Valves, Fittings and Flanges.

And for unusual savings, check Foster Structural Pipe 1/2" thru 60". It's ideal for hundreds of non-pressure uses, foundation piling and limited service lines.



Write **L. B. FOSTER CO.** for Pipe Data Chart PA-11.
Pittsburgh 30, New York 7, Chicago 4, Houston 2,
Los Angeles 5, Atlanta 8, Cleveland 35.

Faster From Foster

Pipe • Valves • Fittings • Piling • Track Material

For More Facts Write No. 271 on Information Card—Last Page

Book Review

(Continued from page 190)

longs to J. L. Moreno, a Viennese psychiatrist who first used it in the 1920's to help people solve emotional problems. This book is devoted to the application of roleplaying in industry. Although the authors don't specifically mention applications to purchasing, the imaginative purchasing executive won't have any trouble finding them.

Roleplaying Benefits All

Roleplaying can be an extremely useful training tool in purchasing. In one application, a buyer can play the role of a salesman and the other buyer play himself. The two can then "negotiate" some purchasing problem. Both can criticize the other's performance; in addition, other buyers in the department can observe and offer suggestions. The end result: improved performance in negotiating and dealing with suppliers. Even the receptionist can sometimes benefit from a roleplaying session. If she plays the role of a visitor and someone else plays the role of the receptionist, she can get a better understanding of how to deal most effectively with visitors. Some companies have used it to improve interdepartmental relations. For example, a buyer can play the part of the shop foreman and the foreman can be the buyer. The two can then discuss some particular problem—such as backdoor selling. The result is that both may do a better job and also better understand the other fellow's job.



AIRCRAFT PARTS -

HANDLE WITH CARE!

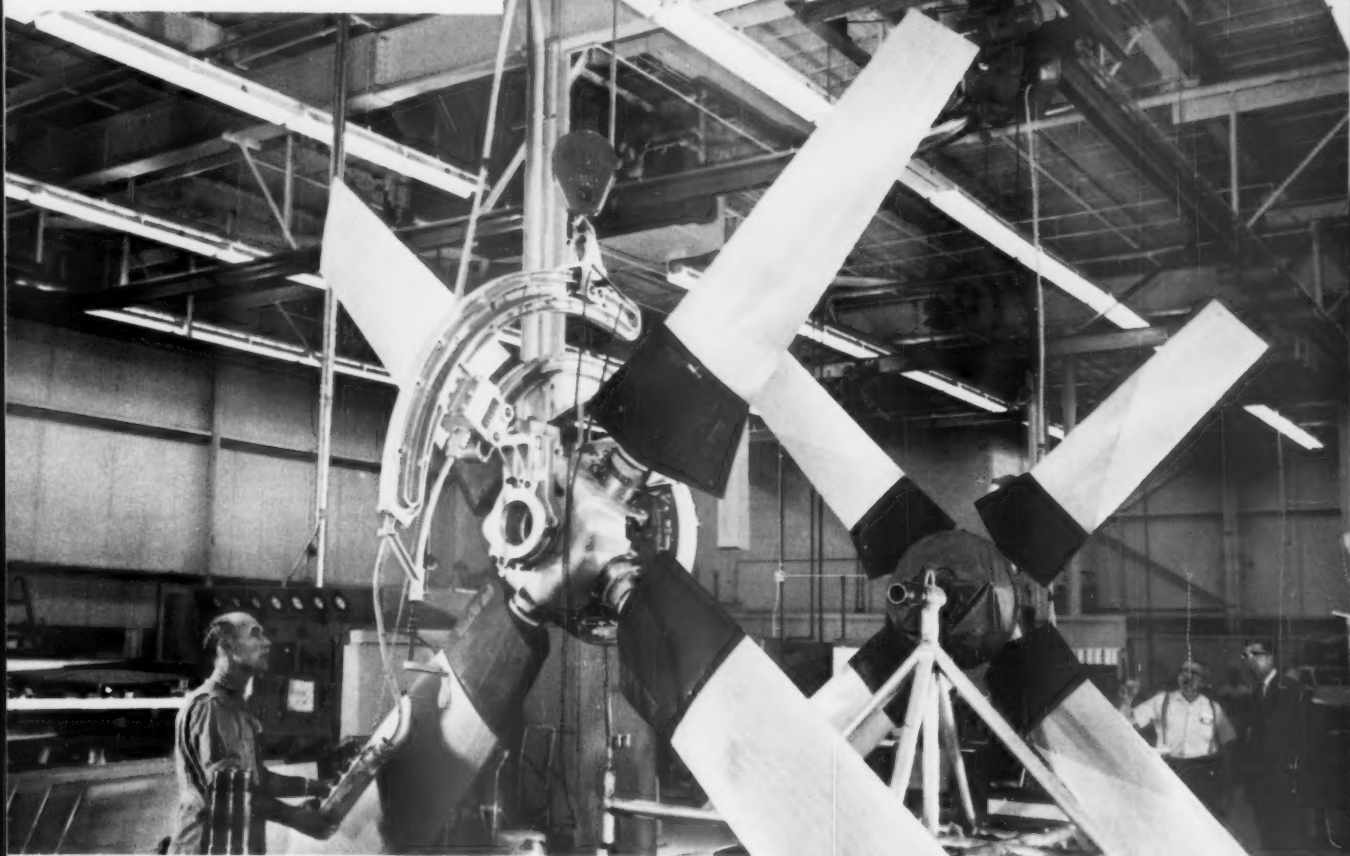


Photo courtesy Northwest Orient Airlines, St. Paul, Minnesota.

Part for part, one of today's turbo-prop or pure jet transports represents an investment that would have bought an entire fleet of planes a few years ago. Overhaul and maintenance procedures for these planes include extra-careful, jet-age methods for quick, safe, reliable handling of every airframe or power-plant part.

Northwest Orient Airlines' new maintenance center is equipped with P&H Balanced Design Hevi-Lift hoists in every department. These hoists provide the right combination of smooth lifting power plus precision spotting control to handle aircraft components with maximum care and minimum effort.

What's more, every P&H hoist in this most modern shop is equipped with the new P&H Pull-A-Hoist — a separate motor-driven tractor unit that provides smooth rolling power and precision positioning of each hoist at the touch of a button. No more lost time tugging or lugging of parts for Northwest's busy mechanics and maintenance specialists!

Bulletin H-63 gives you the complete data about the P&H Pull-A-Hoist — America's newest, most efficient hoist-tractor. Write Dept. 229, Harnischfeger Corp., Milwaukee 46, Wisconsin, today!

HARNISCHFEGER

Milwaukee 46, Wisconsin

P&H

**ELECTRIC
HOISTS**



*Offices in major cities.
see Yellow Pages*



Photo Courtesy Butler Mfg. Co., Galesburg, Illinois

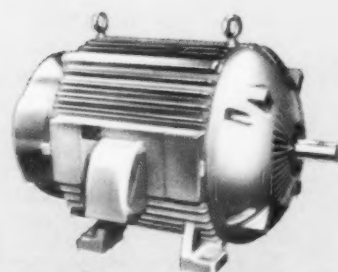
FOR EVERY APPLICATION, THERE'S ONE CRANE OUTSTANDING... P&H!

IN METAL FABRICATION... One man in the cab of this P&H overhead crane keeps several slitting and roll-forming machines supplied with coils of metal for continuous production. In addition, he spots incoming coils in proper storage areas as they arrive from the mills.

This manufacturer gets full use of plant floor area by moving materials through the air. The P&H crane and special coil-handling hook eliminates the "dead" aisle space needed with floor-operated equipment. It also saves manpower, and the safe, precision handling reduces damage to finished stock.

As with every Harnischfeger installation, this long-span (87') crane is specially engineered to consider all factors that may affect operation on this particular job. Special problems are taken in stride, integrated into the overall design. Only this kind of integrated engineering can give you performance that's never in doubt, performance P&H crane users have relied on for over 76 years!

Why not find out more about P&H cranes? Write for bulletin C-42, Department 124, Harnischfeger Corporation, Milwaukee 46, Wisconsin.



All P&H motors are built specifically for crane service — not adapted to it! P&H engineers have designed extra ruggedness into every part for maximum efficiency under the most severe conditions of fast acceleration, frequent reversals, and repeated shock loads. Thousands of P&H crane motors in every-day use prove that they give years of trouble-free service with minimum maintenance.



Offices in major cities...
see Yellow Pages

HARNISCHFEGER
Milwaukee 46, Wisconsin

P&H
OVERHEAD
CRANES

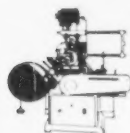
do
you
know
how
much
it
costs
to
label
your
products?



You know the costs of the labels themselves and the labor to apply them — but there are some other "costs" as well, whether you buy labels or make them yourself. How many become obsolete before you've had the chance to use them — and how much money do you have invested in label inventory and storage space? Can you easily and inexpensively change from one label — or one imprint — to another as demand requires — or should you add in the inconveniences and cost of delays while you wait for new labels? Another "cost" consideration, in every sense of the word, is the

informing, selling and reordering job your labels are doing: if they lack readability, completeness and lasting attractiveness, they're probably more of a liability than an asset.

We make machines, type and inks for printing all kinds of labels. (We also make many other machines for marking products, parts and packages *directly*, when that method is more practical than labeling.) The offer we make is simple and could save you several thousand dollars a year: send us some of your labels and if we can't show you a better method that will give you informative, good-looking labels *at the lowest cost*, we'll certainly recommend that you stay with what you have now. Thousands of firms use Markem methods to save money and get better labels. Perhaps you can, too. Markem Machine Co., Keene 34, N. H.



Model 126 — one of 80 Markem machines. From low cost blank stock, produces complete professional quality paper or fabric labels in one or two colors; allows imprint changes in seconds; makes 70-100 labels/min.

HELPING YOUR PRODUCT SPEAK FOR ITSELF

MARKEM

For More Facts Write No. 273 on Information Card—Last Page

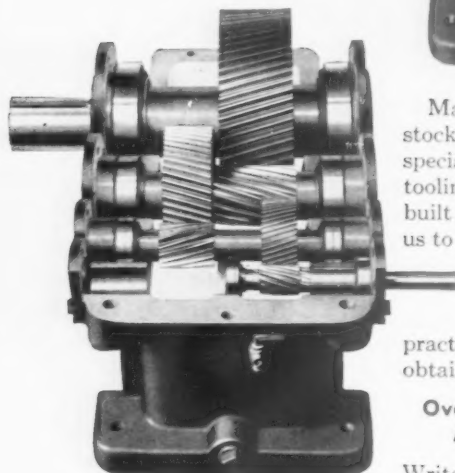
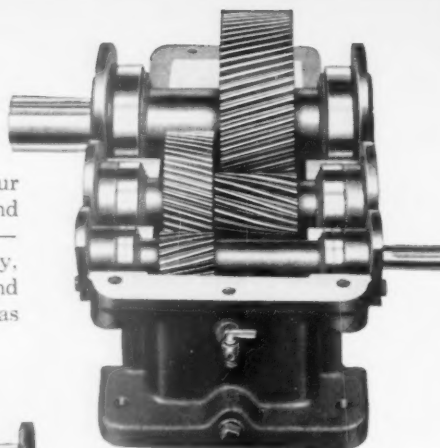


**Fast Delivery
on Custom
Requirements**

Specify **H & S**
Helical Speed Reducers
Single · Double · Triple Reduction

You get *fast action* when you come to Horsburgh & Scott with your speed reducer and gearing problems.

We are able to meet your specifications—or design and build to your specific needs—products of highest quality, backed by the experience and reputation of many years as leaders in the gearing field.



Maintaining one of the largest stocks of patterns and blanks . . . special equipment and special tooling—much of it designed and built in our own plant—enables us to engineer and produce a wide range of custom gearing and transmission requirements, economically and practically as fast as you can obtain them from stock sources.

Overall design conforms to
AGMA specifications



Write for details on wide size and capacity range of H&S Speed Reducers—Helical, Herringbone, Worm Gear and combinations.

H & S **The HORSBURGH & SCOTT CO.**
5112 Hamilton Avenue • Cleveland 14, Ohio

Specializing in fast production of quality Speed Reducers and Gearing to meet custom requirements.

For More Facts Write No. 274 on Information Card—Last Page

Suppliers

James D. Bowen has been appointed sales manager for Raytheon Company's Sorensen product line of power supplies, voltage regulators, inverters and con-



James D. Bowen

verters, frequency changers, cable testers, meters and accessories.

Prior to joining Raytheon, Bowen was Eastern sales manager for Sola Electric Company and a sales engineer for Sorensen & Company, Inc., before that firm was acquired by Raytheon.

Scott B. Wescott has been appointed manager of sales for AllianceWare, recently acquired by Crane Company from American Metal Products of Detroit, Michigan.

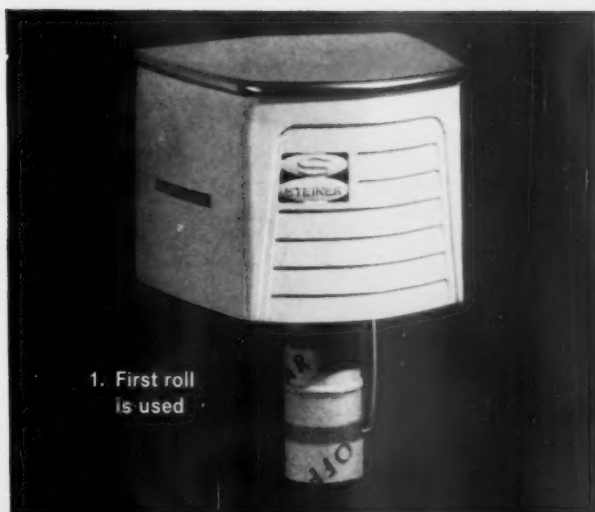
Wescott has been employed in a sales capacity by Crane Company since 1940. Most recently, he was sales manager of brass products, and before that, he was assistant district sales manager for the eleven western states.

Mr. Wescott will make his headquarters in Alliance, Ohio.

Charles R. Eisenstein has been appointed district manager-sales engineering at the newly-established New York office of Badger Manufacturing Company's Expansion Joint Department. From his headquarters at 60 East 42nd Street, Eisenstein will direct sales

(Please turn to page 200)

PURCHASING



1. First roll is used



2. Tear off core

*The Steiner
Tissue-Master . . .*
**cuts washroom
maintenance
costs . . .**

is never empty



3. Spare roll drops into place

The Steiner Tissue-Master two-roll dispenser will lower your washroom maintenance costs, and give you the convenience of a double supply of tissue. Here are the Tissue-Master features that add up to washroom economy for you:

Double supply—The Steiner Tissue-Master holds two rolls of soft, quality tissue. Your tissue supply lasts longer, and the dispenser will never be empty. When the first roll is finished, simply tear off the core and the second roll automatically drops into place.

Less maintenance—The Tissue-Master cuts washroom maintenance time in half as tissue supply lasts longer and less maintenance is required. A view slot

tells at a glance when the Tissue-Master needs refilling.

Quality dispenser—The Tissue-Master is made of durable styrene plastic with a clean white finish that resists rust and scratches; never needs painting. A flat chrome top makes a convenient shelf that isn't harmed by burning cigarettes. Tissue theft is eliminated by a sturdy lock. The Tissue-Master is also available in an all metal model.

Complete line—Steiner Company manufactures a complete line of quality paper products and controlled dispensing cabinets for every washroom need. Write today for information on how Steiner products and controlled dispensing can save you more money.

STEINER CONTROLLED ROLL TOWEL DISPENSERS



AMERICAN AUTOMATIC
Semi-Automatic



DRI-MASTER
Manual Operation



SERVA-MATIC
Fully Automatic

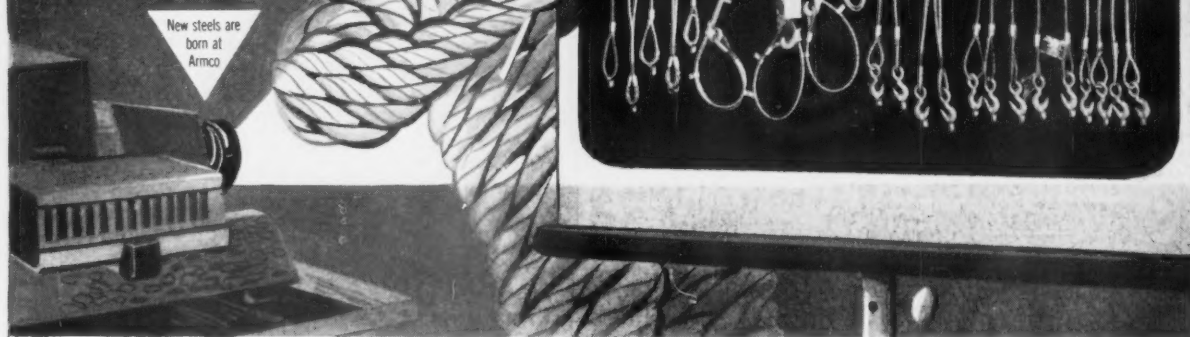
STEINER COMPANY
740 Rush St. • Chicago 11, Ill.



For More Facts Write No. 275 on Information Card—Last Page

Enlist Union's Tuffy In Your Crusade for Safety

New steels are
born at
Armco



"Accidents on the job cost industry more than \$4 billion a year," reports the National Safety Council. 230 million man-days were lost, nearly 2 million disabling injuries were suffered in 1959. As rough as these figures look, they represent progress. The accident rate has been cut in half since the twentieth century started.

In plant after plant demonstrations by Union fieldmen have pointed the way to accident reductions. They show how the correct use of the right set-up of Union's Tuffy

Slings and Hoist Lines affords greater safety and longer service life.

Proper Fittings Add Safety, Too

Union provides a sling fitting for every need. Fully described in the Tuffy Sling Handbook. Have them factory-fitted when you order slings or rig them yourself. Enroll in Union Tuffy's safety-lift club. Start by sending for the two books offered below.

Union Wire Rope **Tuffy Tips** on safe use of Slings and Hoists

Lifting Strains Take High Toll of Injuries



Did you know that in some states one in every six compensation claims involves back injuries? And that one insurance company says back injuries constitute 60% of their claim expense? Hernia is another hazard of materials handling. One manufacturer reported 75% of his compensation claims involved hernias. This high incidence of hernias and back injuries can be greatly reduced by proper lifting equipment and methods.

Free! Two Valuable Tuffy Handbooks

1. "Tuffy Tips" include many more safety hints. Also tells how to use wire rope and slings to get longer service life. Tuffy Tips do's and don'ts can mean money in your pocket.

2. "Tuffy Sling Handbook." Tells all about slings from A to Z. Contains helpful data on the selection and use of slings—types, dimensions, weights, fittings, rated loads, safety-approved signals.



6-61

BOTH FREE! Write Union Wire Rope, Armco Steel Corporation, 2282 Manchester Ave., Kansas City 26, Missouri



For More Facts Write No. 276 on Information Card—Last Page



STRENGTH



LIGHTNESS



THRIFT



DESIGN

...get them all with 3M Adhesives!

The formulated talents of 3M Brand Adhesives can emphasize any one of a variety of fastening properties, depending upon which is crucial for the particular job at hand. But all offer the following advantages . . .

STRENGTH for example. SCOTCH-WELD® Brand Structural Adhesives create bonds that often are stronger than the materials joined! They distribute stress loads uniformly, with flexibility that resists vibrational fatigue. Fastening holes are eliminated, material integrity is preserved, joints are sealed against corrosion.

LIGHTNESS adds appeal! 3M Adhesives increase product appeal, save freight and handling costs, help take pounds off today's metalworking prod-

ucts. They eliminate mechanical fasteners, increase the strength of a lightweight assembly by distributing stresses evenly over a wide area.

THRIFT is a bonus. Many operations are eliminated, e.g., hole-making, countersinking, heat treating. No bolting, riveting, stapling, welding, brazing, sealing to do!

DESIGN freedom: Parts are fewer, assemblies simpler, unions stronger, using 3M Adhesives. You have a wider

choice of materials, because 3M Adhesives bond practically any kinds of materials to themselves or other materials, e.g. aluminum, brass, ceramics, copper, glass, magnesium, permanent magnets, plastics, steel, stainless steel, wood.

What sticky problem of design, production, or sales can these modern adhesives help you solve? Why not call in your nearest 3M Field Engineer for consultation? Or write: AC&S Division, 3M Company, Dept. SBCC-111, St. Paul 6, Minn.

"SCOTCH-WELD" is a Reg. T.M. of 3M Co. © 3M Co., 1961

ADHESIVES, COATINGS AND SEALERS DIVISION

MINNESOTA MINING AND MANUFACTURING COMPANY

...WHERE RESEARCH IS THE KEY TO TOMORROW



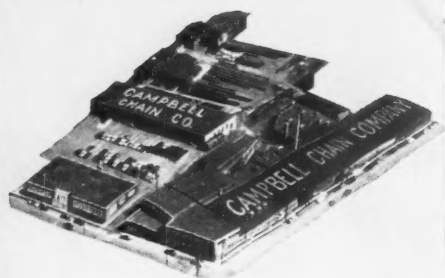
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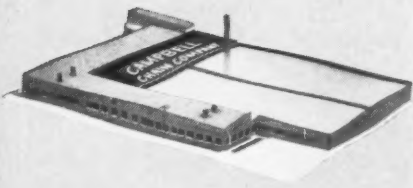
Complete CAMPBELL CHAIN plants cover the country...

**to give you faster
service and delivery!**

**PENNSYLVANIA
IOWA
CALIFORNIA**



York, Pa.



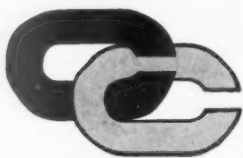
West Burlington, Iowa



Union City, Calif.

Yes, Campbell Chain has *complete* manufacturing facilities all across the country—in the East, the Mid-West and the Far West. This means money-saving, time-saving convenience for local industrial, commercial and automotive buyers—without the problems of delay in shipment. Backing up these three factories are Campbell warehouses with full stocks of all chain types and grades. It's a coast-to-coast network that assures the service and delivery you want—and need!

CAMPBELL CHAIN COMPANY



3 FACTORIES: York, Pa.; West Burlington, Iowa; Union City, Calif.
WAREHOUSES: Medford, Mass.; Atlanta, Ga.; Dallas, Texas; Chicago, Ill.; Portland, Ore.; Seattle, Wash.; Los Angeles, Calif.

Suppliers

(Continued from page 196)

and engineering activities for this Department in the metropolitan New York, Long Island and Northern New Jersey areas.

Eisenstein, a registered professional engineer who received his M.E. degree at Columbia, has served as an expansion joint application engineer for the past five years.

Thompson Ramo Wooldridge has named **James J. Childs** eastern regional manager for Industrial Control Systems. He will be responsible for the marketing the TRW numerical control equip-



James Childs

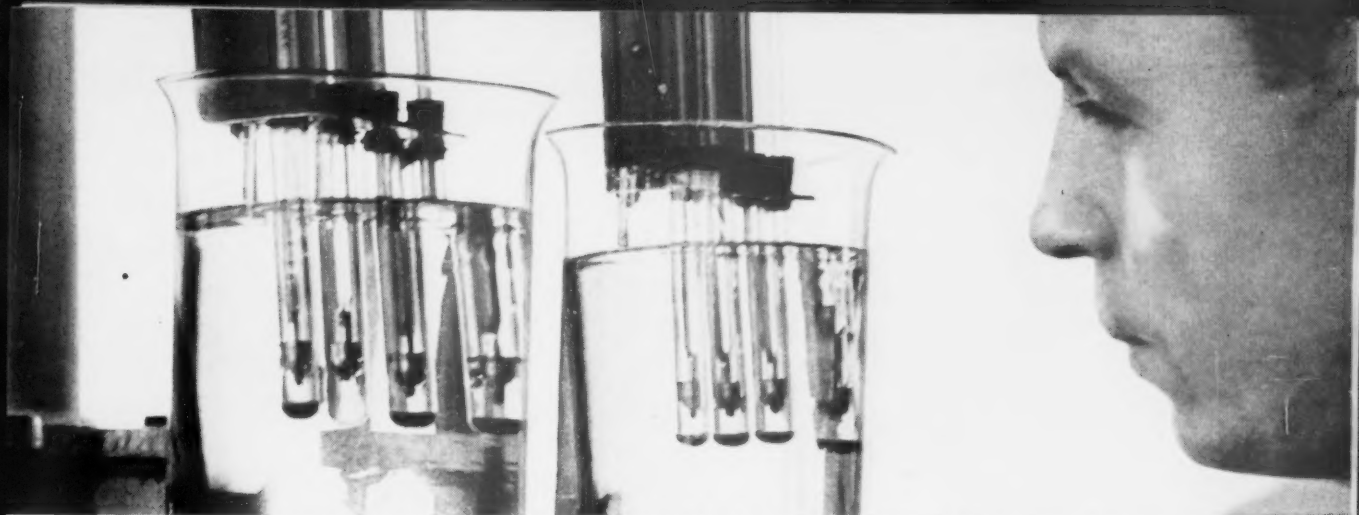
ment for machine tools in the Northeast, and his office will be in New York City.

Prior to joining TRW this year, Childs was in charge of the numerical control program at **Republic Aviation Corp.**, in Farmingdale, L. I.

Edward A. Kitsch has been named sales manager of the **Imperial Electric Company**, Akron, Ohio, manufacturer of motors, generators, and motor-generator sets.

Previously, Kitsch was employed by the **Louis Allis Company** as manager of machine tool industrial sales. He is a graduate of the University of Illinois with a B. S. degree in Electrical Engineering and holds membership in the A. I. E. E.

PURCHASING



Dropping point test shows how greases react to heat. Beaker fluid has been heated to 390°F. All greases tested except Darina (second tube from left) have passed from solid to liquid state.

BULLETIN:

Shell reveals the remarkable new component in Darina Grease that helps it save up to 35% on grease and labor costs

Darina® Grease is made with Microgel*, the new thickening agent developed by Shell Research.

Darina lubricates effectively at temperatures 100° hotter than most conventional soap base greases can withstand.

Read how this new multi-purpose industrial grease can help solve your lubricating problems and even save you up to 35% on grease and labor costs.

THERE IS no soap in Darina Grease. No soap to melt away—wash away—or dissolve away.

Instead of soap, Darina uses Microgel—a grease component developed by Shell Research.

What Microgel does

Because of Microgel, Darina has no melting point. It won't run out of gears or bearings.

Compared with most conventional soap-base greases, Darina provides significantly greater protection under adverse service conditions.

Mix water into Darina and the

grease does not soften. It shrugs off water—won't emulsify.

Resists heat

Darina will withstand operating temperatures 100° hotter than most conventional multi-purpose greases. It cuts leakage and reduces the need for special high-temperature greases.

Also, Darina resists slumping, thus forming a more effective seal against foreign matter.

Saves money

Shell Darina can reduce maintenance expenses while it protects your machin-

ery. Savings of up to 35% on grease and labor are quite possible.

In some cases lubrication intervals have been extended to double what they were before. Less grease is consumed and less time consumed applying it.

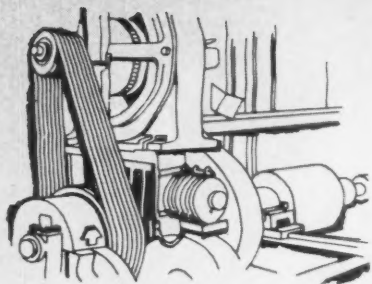
For details, see your Shell Representative. Or write: Shell Oil Company, 50 West 50th Street, New York 20, New York.

*Registered Trademark

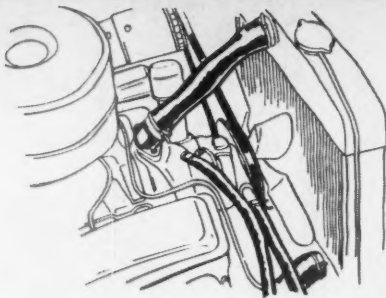


A BULLETIN FROM SHELL
—where 1,997 scientists are helping to provide better products for industry

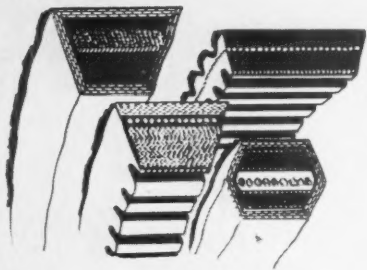
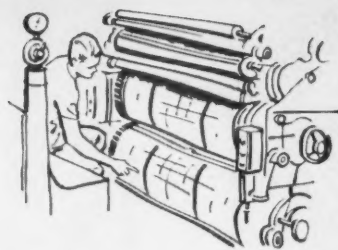
V-BELT DRIVES



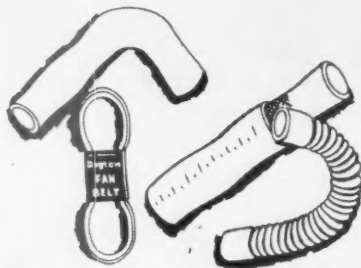
AUTOMOTIVE PRODUCTS



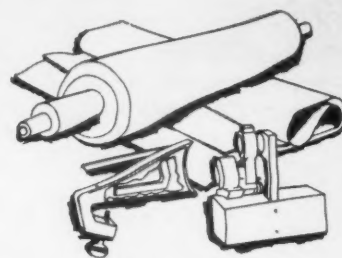
PRINTING PRODUCTS



Dayco offers the only complete line of V-Belts in the industry for every power transmission need—from fractional to 1,000 and more horsepower.

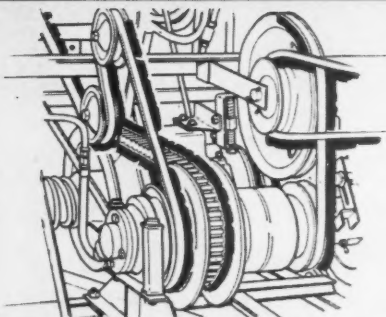


Dayco provides a complete line of Fan Belts, Radiator Hose, and other rubber products for passenger cars, trucks, busses, and tractors.

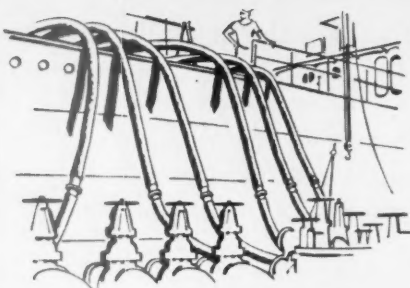


Dayco offset and letter press rollers, Gold Seal offset Blankets, Color Separators and Fountain Dividers, for all makes of presses.

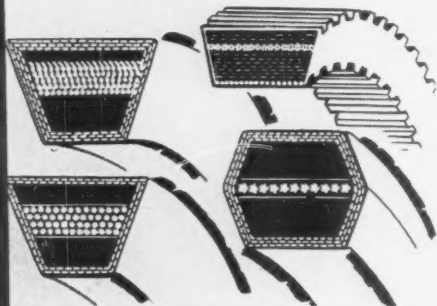
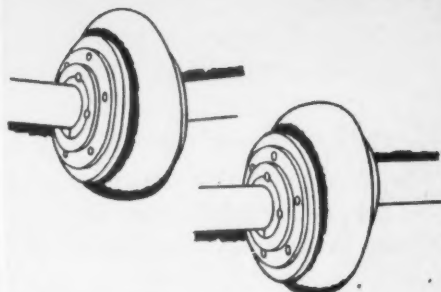
AGRICULTURAL V-BELTS



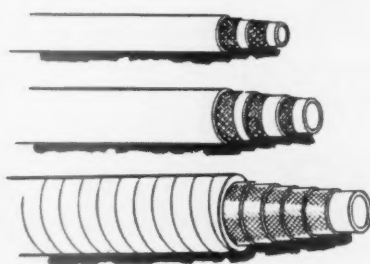
INDUSTRIAL HOSE



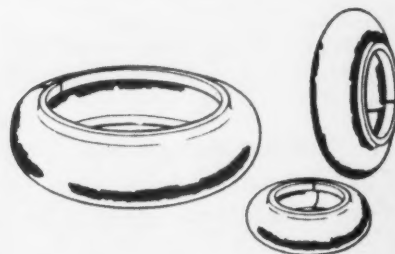
MOLDED RUBBER



Dayco builds specialized V-Belts for the efficient transmission of power on all types of traction, propulsion and auxiliary farm implement drives.



Dayco offers molded and horizontal braided, machine and hand wrapped fabric, and woven jacket constructions for all industrial applications.



Dayco custom-engineered molded rubber, rubber-to-metal and rubber-and-fabric components for mechanical applications.

Dayco

Take your pencil. Get all the Dayton literature from your files. Make one little change. In place of Dayton write Dayco.

From now on, that's our product name. **Dayco** V-Belts. **Dayco** Hose. **Dayco** Printing Rollers and Blankets. **Dayco** Molded Rubber. **Dayco** Agricultural and Railway Drives.

Thus ends the difference between our corporate name, **Dayco** and our former product name, **Dayton**.

Let us repeat. The only thing that's changed is the name. The same high quality. The same broad line. The same friendly, helpful people. Only their product line is now **Dayco**. **DAYCO**. **D-A-Y-C-O**.

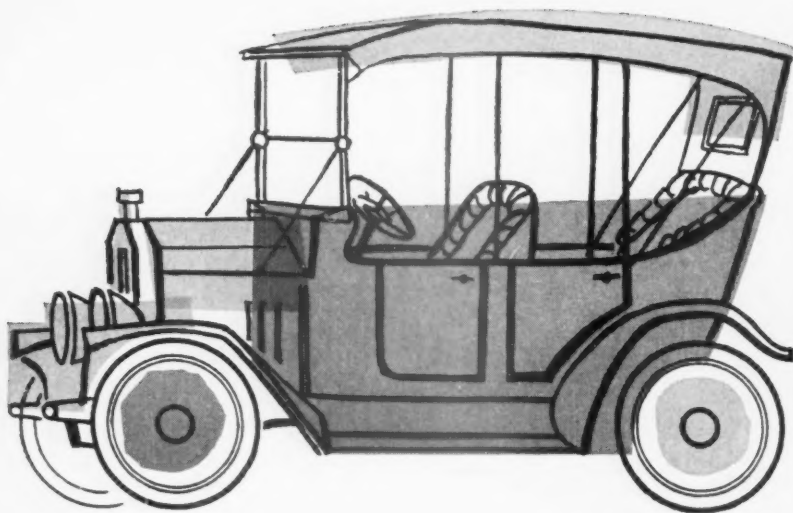


Rubber Products Division

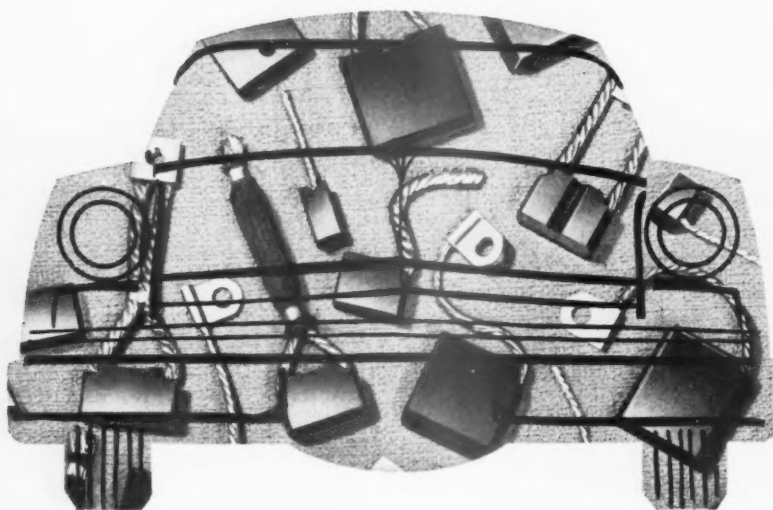
Melrose Park, Illinois

(Formerly known as The Dayton Rubber Company)

For More Facts Write No. 280 on Information Card—Last Page



Since 1915 there have been
STACKPOLE BRUSHES
 on Almost Every Make of Car



Headquarters for
STARTER MOTOR BRUSHES
GENERATOR BRUSHES
AUXILIARY MOTOR BRUSHES
DISTRIBUTOR BRUSHES
 . . . and many special types.

STACKPOLE CARBON COMPANY, St. Marys, Pa.

GRAPHITE BEARINGS & SEAL RINGS • ELECTRICAL CONTACTS • ROCKET NOZZLES • VOLTAGE
 REGULATOR DISCS • PUMP VANES • CHEMICAL ANODES • CERAMIC MAGNETS • WELDING &
 BRAZING TIPS • FERRITE CORES • FIXED & VARIABLE COMPOSITION RESISTORS • SLIDE &
 SNAP SWITCHES • AND MANY OTHER CARBON, GRAPHITE AND ELECTRONIC PRODUCTS

For More Facts Write No. 281 on Information Card—Last Page

Suppliers

The appointment of **Mr. William J. Kotowicz** as manager of aluminum sales at the Houston, Texas plant of **Joseph T. Ryerson & Son, Inc.**, was announced recently by **Mr. Loren B. Clay**, sales



William J. Kotowicz

manager. Previously he had been a field representative responsible for the sale of the company's full line of steel, aluminum, industrial plastics and metal fabricating machinery.

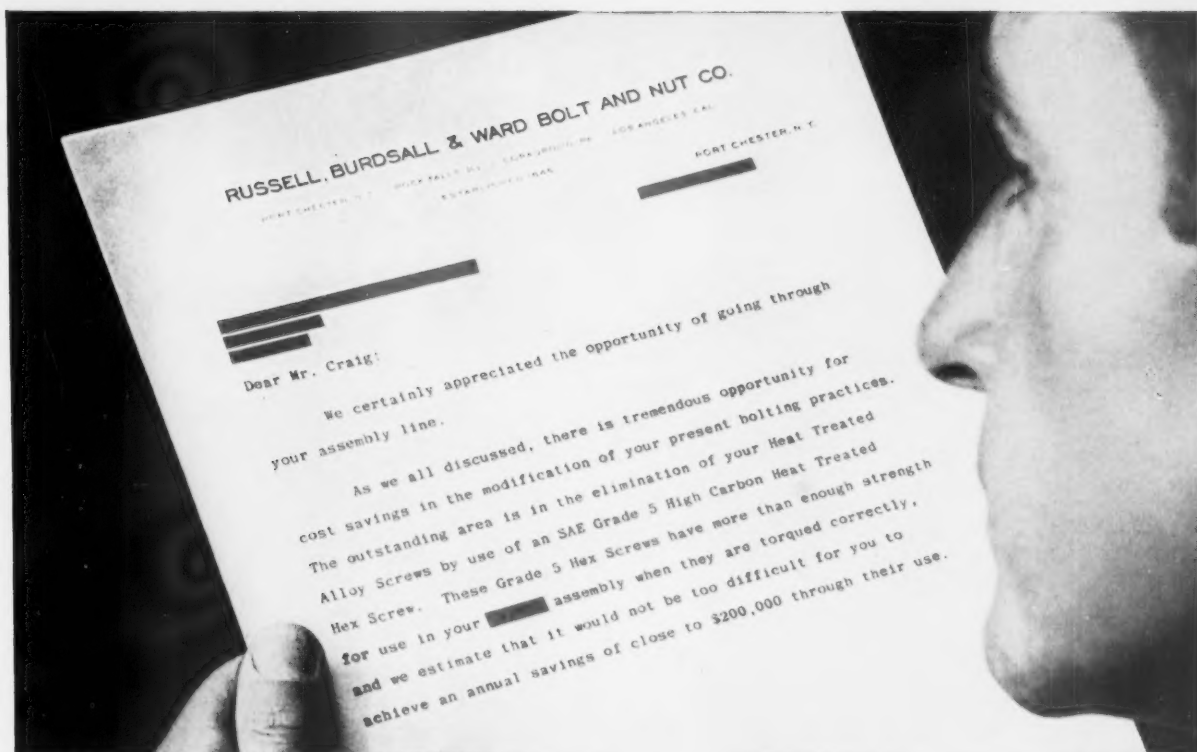
Orville G. Mahnensmith has been appointed divisional sales manager of the Fill-Rite Division of **Tuthill Pump Company, Chicago, Illinois.**

Mahnensmith was formerly



Orville G. Mahnensmith

sales manager of the **Ossian Engineering Company**, whose assets were acquired by Tuthill earlier this year.



Eliminates big waste of dollars



Fastener value analysis study by RB&W reaps rewards without design changes

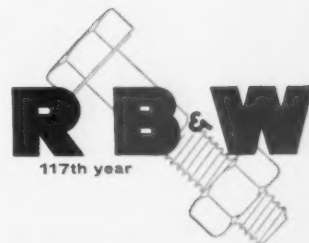
You see above an excerpt from a letter written to a large manufacturer by an RB&W technical advisor. Subsequently he submitted two detailed reports to document how savings could be achieved.

Because of the nature of the product involved, the manufacturer didn't want to make engineering changes. They preferred an alternative RB&W recommendation—substituting the proper standard screw in place of alloy screws—size for size. The cost reduction made possible: nearly \$100,000 annually!

Opportunity for savings may not be so great at your plant. But they're bound to be worthwhile.

For instance, the difference in cost between a $\frac{3}{8}$ x 1 socket-head screw and a bright hex screw is about 5¢. Not much of a saving in itself. But suppose you use 150 of these socket-head screws in just one product. The saving is \$7.50 per unit. If you produce 1000 units each year, that's savings of \$7,500. With a line of ten such products, the profits saved would conceivably be \$75,000 or more.

This is "value analysis" with a high dollar dividend. Take advantage of it by consulting with an RB&W Fastener Specialist. Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N. Y.




Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Sales office and warehouse at: San Francisco, Calif. Additional sales offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas.

For More Facts Write No. 282 on Information Card—Last Page

Lincoln Electric's plan for...

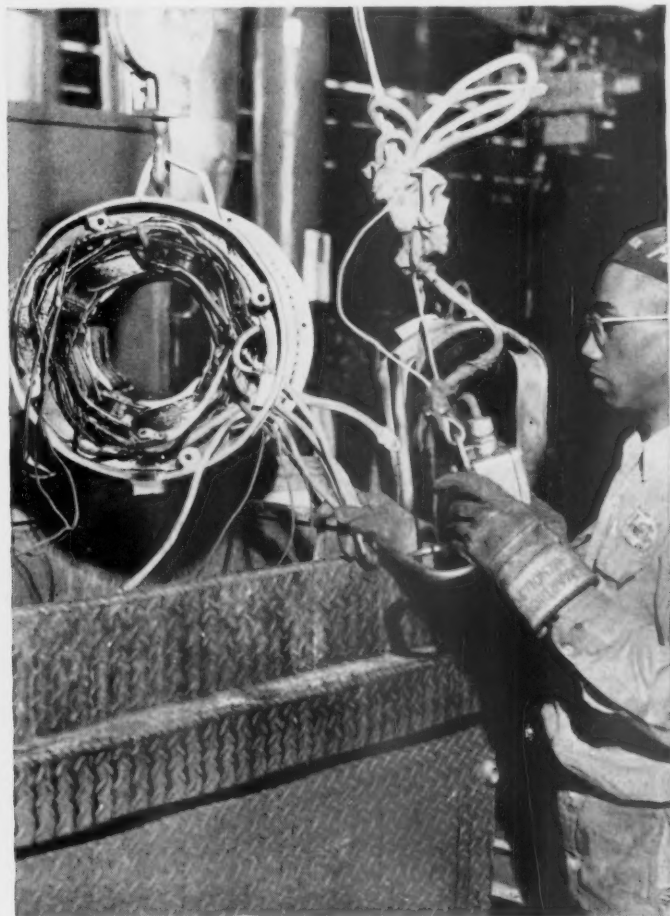
COMPLETE WELDER REMANUFACTURING.



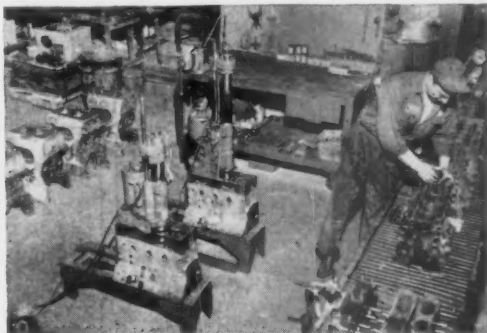
Machines returned to the plant for remanufacturing are completely torn down and rebuilt with new parts where needed. All work is done at published prices known beforehand. Owner receives new machine guarantee on completion of the work.

... REDUCES CAPITAL INVESTMENT, PRESERVES PROFITS

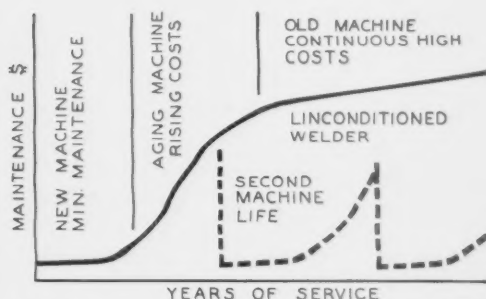
If you own Lincoln welding equipment, you know it traditionally outlasts other makes. Routine maintenance is all that's needed to keep it in top operating condition. But any machine reaches a point where mounting repair costs indicate the need for a complete overhaul. Lincoln provides a complete factory remanufacturing service for owners of Lincoln equipment. It's called Linconditioning. Because Linconditioned welders carry a new machine guarantee, effective life of your welder is extended 100% at about half the cost of a new machine. This kind of service, we believe, helps Lincoln customers battle indirect costs, preserve hard-to-keep profits.



Your welder is disassembled right in the Lincoln plant by trained factory mechanics; then completely overhauled and remanufactured. Parts are restored to like-new condition. Those beyond repair are replaced with the same new parts which go into brand-new machines. Here, frames from generator-type machines are vapor-degreased. Dirt and dust is removed from the coils which are then tested for grounds, shorts and electrical balance. Each must test out like new before assembly.



Gas and diesel engines for portable welders are thoroughly reconditioned, too. Blocks are cleaned, inspected for cracks, sizes and general condition. Cylinders are re-bored, honed to proper oversize and finish. Valves and crankshafts, checked for wear, are reground and buffed. New piston rings are precision-fitted to bore size. After re-assembly, engine is idle-run to wear in.



Here's a graphic expression of Linconditioning. When a machine is new, it requires little if any maintenance. As it ages, the occasional service it needs can be obtained from your local Lincoln field service shop. But eventually, the frequency of repairs causes constant expense. At this point, Linconditioning restores your machine to new condition, doubles its effective service life... all at a price varying from 40-50% of the cost of a new machine. Find out more about this money-saving remanufacturing plan now. Contact your local Lincoln field engineer. Or, write for bulletin 9100.1.

THE LINCOLN ELECTRIC COMPANY

• DEPT. 2861

• CLEVELAND 17, OHIO

LINCOLN
WELDERS

THE WORLD'S LARGEST MANUFACTURER OF ARC WELDING EQUIPMENT AND ELECTRODES

NOVEMBER 20, 1961

For More Facts Write No. 283 on Information Card—Last Page

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Let Disston solve your replaceable metal parts problems

Disston's Custom Metal Parts and Services offer: ■ modern facilities ■ over a century of skilled craftsmanship ■ a thorough knowledge of steel and its applications ■ a reputation for *uncompromising quality*.

Disston is ready to serve you, whether you require a single service or a complete product manufactured to your exact specifications. May we help you? Consult Disston first . . . serving industry since 1840. Disston, Porter Building, Pittsburgh 19, Pennsylvania.



Send for this free booklet, "Disston Custom Steel Parts and Service," which describes Disston's wide range of manufacturing capabilities.

Disston Division, H. K. Porter Company, Inc.
Porter Building, Pittsburgh 19, Pa.

Dear Sirs: Please:

- ☐ Send free booklet "Disston Custom Steel Parts and Service"
- ☐ Have representative call

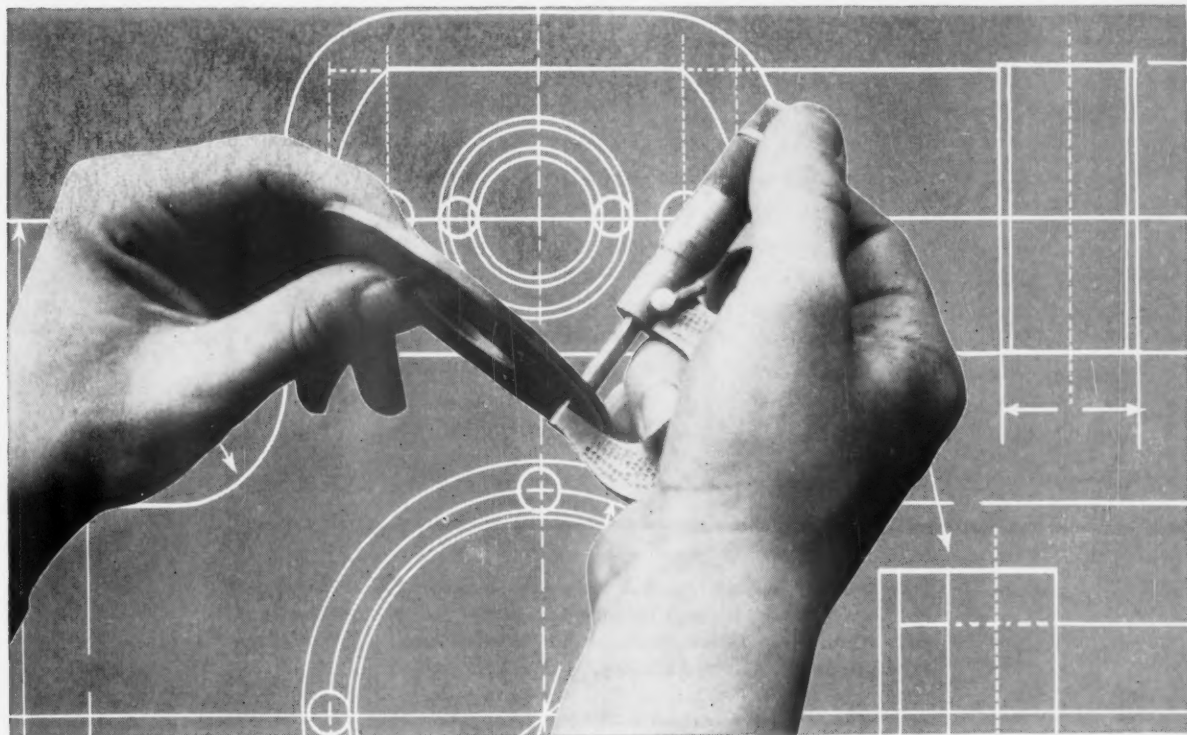
Name _____

Title _____

Company _____

Street _____

City _____ State _____



PORTER

**DISSTON DIVISION
H. K. PORTER COMPANY, INC.**

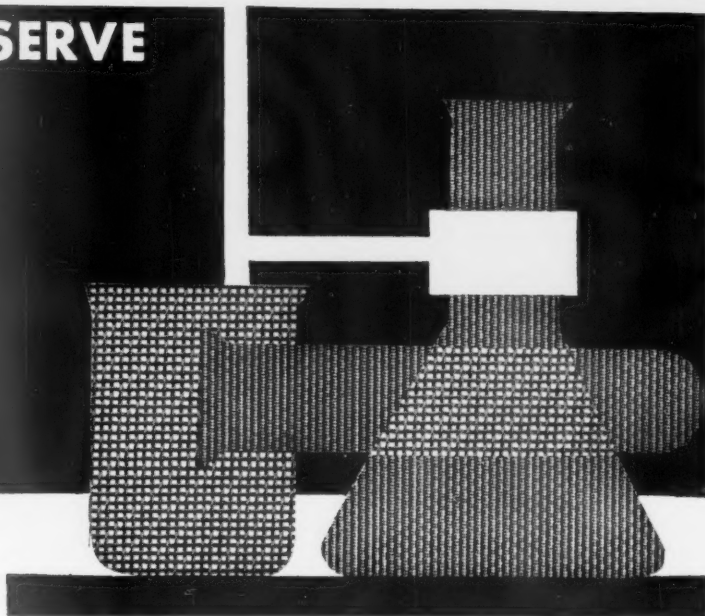
For More Facts Write No. 285 on Information Card—Last Page

use wire cloth in critical operations?

THEN THEY DESERVE

Cambridge

WIRE CLOTH
QUALITY &
SERVICE



What is Cambridge Quality?

Wire that consistently meets metal or alloy analyses. Trained operators and modern looms to produce cloth from any metal or alloy in any weave. Constant inspection to assure high accuracy in mesh count and mesh size. Craftsmen to make fabrications in any size, shape or quantity to exacting specifications.

This is Cambridge Wire Cloth Quality.

What is Cambridge Service?

Prompt answers to mail or phone inquiries. Experienced Field Engineers—experts in their field—who can help you select the wire cloth to do the best job at lowest cost. Prompt deliveries. Large stocks of frequently used cloth for immediate shipment. Follow-up service to see that our product is giving you the results you want.

This is Cambridge Wire Cloth Service.

Your Cambridge Field Engineer can show you how Cambridge quality and service can help you in your operation. Call him at any time. He's listed in the Yellow Pages under "Wire Cloth". Or, write direct for Illustrated 120-page catalog.



Refer to our technical data sheet in **CHEMICAL ENGINEERING CATALOG**, Page 185.



The Cambridge Wire Cloth Co.

Department R • Cambridge 11, Maryland

Manufacturers of Metal-Mesh Conveyor Belts, Flat Wire Conveyor Belts,
Wire Cloth, Wire Cloth Fabrications and Gripper® Metal-Mesh Slings.

For More Facts Write No. 286 on Information Card—Last Page



These are the hands of a purchasing agent responsible for buying washroom supplies. Businesses across the country find in the Fort Howard line the tissue to meet their exact performance and price needs.



Employee-Pleasing Softness and Strength —at Low Cost



Fort Howard offers many grades of roll and folded tissue so that you may meet your exact requirements in performance and price. For more information on how to keep your costs down but service up, consult your Fort Howard distributor.

AMERICA'S MOST USED PAPER PRODUCTS AWAY FROM HOME



Fort Howard Paper Company

©Fort Howard Paper Company

Green Bay, Wisconsin • Sales Offices in New York, Chicago, Los Angeles

For More Facts Write No. 287 on Information Card—Last Page

NOVEMBER 20, 1961

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*look beyond
your slide rule*

when buying custom molded plastics

The unit cost of a molded plastic part does NOT tell the entire story . . . nor should it be the sole factor in your selection of a custom plastic molder.

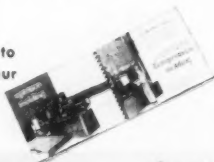
Specifying Aico-molded plastics not only assures you of a reasonable unit cost, but will provide a priceless bonus in Aico's fully integrated molding service . . . a service that eliminates split responsi-

bilities and assures delivery deadlines that are respected.

AICO offers all users of custom molded plastics a completely dependable service with unmatched experience and coordinated facilities for Engineering, Mold Building, Compression, Transfer, Plunger, Injection and Cold Molding . . . plus the molding of Reinforced Fiberglass.

look to AICO for custom molded plastics

Send for AICO's FREE Facilities Booklet. It's a valuable guide to the selection of a Custom Plastics Molding Service to meet your requirements.



AMERICAN INSULATOR CORPORATION

NEW FREEDOM, PENNSYLVANIA



Time Control Boosts P.A.'s Efficiency

(Continued from page 208)

pocket Day-Timer so that whether he's in or out of his office he always has a record of all appointments and his secretary knows where he can be reached.

Provides Permanent Record

Smith finds the wallet unit is particularly handy when he's on one of his frequent business trips. He uses it mainly to keep a record of expenses, reservations, and appointments. The wallet unit has a complete page for each day.

About once a month Smith goes over his wallet and desk books looking for "patterns". If a certain action seems to be repetitive he considers delegating it to a subordinate. He also weighs the time spent with suppliers and other business contacts against the importance of business done with that particular person.

But does the paperwork of systematic time scheduling take more time than it actually saves? Definitely not, says Smith. He feels that most of the data would have to be noted somewhere anyway. His method eliminates additional memo-making, provides a permanent record of important data, and has helped him improve his personal effectiveness.

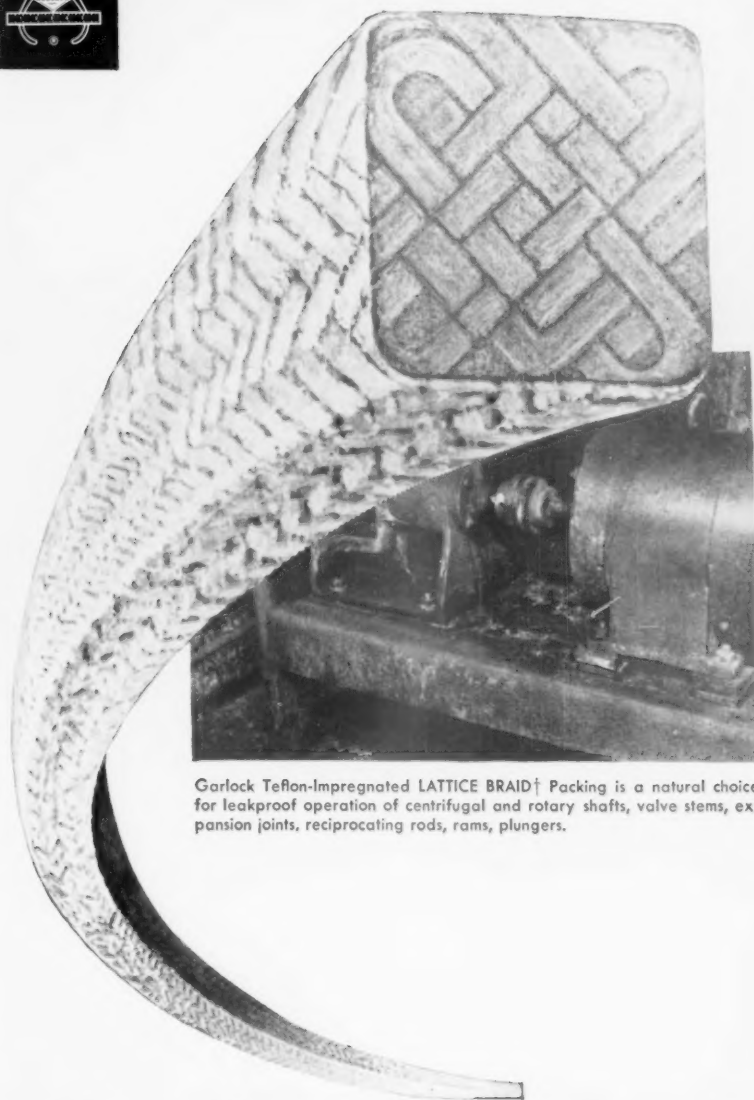
► END

Read
"Purchasing
in the
New Defense
Program"
in the
next issue of
**PURCHASING
MAGAZINE**

PURCHASING

HIGH CONTENT TEFLON* LATTICE BRAID PACKING...

now at regular packing prices!



Garlock Teflon-Impregnated LATTICE BRAID† Packing is a natural choice for leakproof operation of centrifugal and rotary shafts, valve stems, expansion joints, reciprocating rods, rams, plungers.

An exclusive Garlock manufacturing technique now offers Teflon-Impregnated LATTICE BRAID Packing** for approximately 40% less than ordinary Teflon packing . . . yet this superior new packing contains *more than 30% Teflon by actual weight*. Teflon powder is thoroughly sintered prior to treatment by a unique Garlock process, giving greater stability under temperature changes (-90° to $+500^{\circ}$ F). Outstanding resistance to glazing. Minimum swell, because Teflon is non-absorbent. Reduced friction and wear, because Teflon is virtually "frictionless." Excellent resistance to chemicals and corrosives.

And LATTICE BRAID construction affords greater strength, longer life, lower maintenance cost. Each strand of treated yarn is interwoven at a 45° angle through the packing body. Completely integrated structure for maximum strength. No single outer braid to wear through. Holds together much longer. Once properly installed, further gland adjustment is usually unnecessary.

Available in two types for efficient, low-cost sealing under all conditions:

GARLOCK 5875 Packing of Teflon-Impregnated WHITE Asbestos for corrosive and strong chemical service (except strong mineral acids and caustics). Withstands neutral and alkaline water, weak acid and caustic solutions. Edible liquids, paper pulp and other products where non-contamination is required. Gasoline, oils—cold and hot (including tar, asphalt, creosote).

GARLOCK 5881 Packing of Teflon-Impregnated BLUE Asbestos specifically designed for strong acids and caustics. Also resists alcohol, lime solutions, acid sludge, waxes, chlorine, dry solvents. Withstands high pressure steam cleaning. Proved non-nitratable in laboratory test.

Enjoy fast delivery from warehouse stock. Both styles immediately available in sizes from $\frac{1}{4}$ " to $\frac{5}{8}$ " in $\frac{1}{16}$ " increments and $\frac{3}{4}$ " to 1" in $\frac{1}{8}$ " increments in spool or reel form. For more information, contact nearest of 26 Garlock sales offices and warehouses throughout the U.S. and Canada. Or, write for Catalog AD-185, Garlock Inc., Palmyra, N.Y.

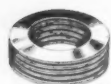
GARLOCK

Canadian Div.: Garlock of Canada Ltd.
Plastics Div.: United States Gasket Company. **Order from the complete line** of quality Garlock products . . . Packings, Gaskets, Seals, Molded and Extruded Rubber, Plastic Stock and Parts.

*Du Pont Trademark

**Patent Applied For
†Registered Trademark

For More Facts Write No. 290 on Information Card—Last Page



Belleville



Compression



Conical



Die



Discs



Drawbar



Energy Cartridge



Extension



Flat



Garter



Hairsprings



Helical



Hourglass



Power



Spiral



Starter



Swivel End



Torsion



Valve



Variable Pitch



Volute

springs

and other things

custom-made to quality standards

Answer your
"where to get it" questions-

by calling on the versatile
experience represented
by these typical springs and
stamped parts. Here is
unusual ability to analyze
your part from both design
and production efficiency and
to make cost-saving
contributions where possible.

Whether your requirements
are large or small, routine or
extreme precision, you'll get
a better brand of service
and quality from the best
springmakers in the business.

Send for "Pocket Guide to
Springs and Other Things"
—a quick picture of our
products and services.



Assemblies



Fasteners



Catches



Plates



Clamps



Retainers



Clips



Stampings



Washers



Electronic Coils



Terminals



Wire Forms



Associated Spring Corporation

General Offices: Bristol, Connecticut

Wallace Barnes Division, Bristol, Conn. and Syracuse, N. Y.

F. N. Manross and Sons Division, Bristol, Conn.

Dunbar Brothers Division, Bristol, Conn.

Wallace Barnes Steel Division, Bristol, Conn.

Canadian Subsidiary: Wallace Barnes Co., Ltd., Hamilton, Ont. and Montreal, Que. Puerto Rican Subsidiary: Associated Spring of Puerto Rico, Inc., Carolina, P.R.

Raymond Manufacturing Division, Corry, Penna.

Ohio Division, Dayton, Ohio

Cleveland Sales Office, Cleveland, Ohio

Chicago Sales Office, Chicago 46, Ill.

B-G-R Division, Plymouth and Ann Arbor, Mich.

Gibson Division, Mattoon, Ill.

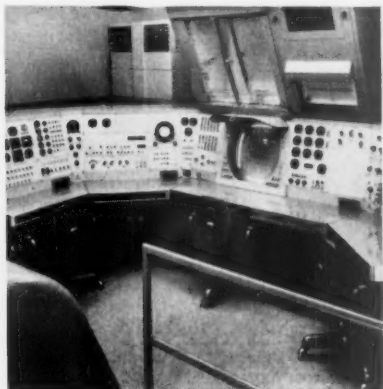
Milwaukee Division, Milwaukee, Wis.

Seaboard Pacific Division, Gardena, Calif.

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MATERIALS-HANDLING NEWS

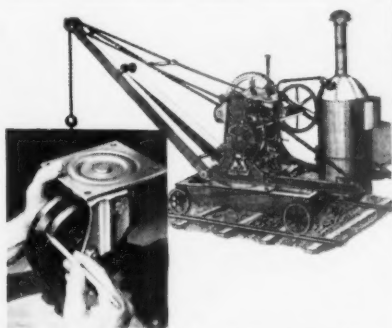
NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS



Famous Link trainer rolls on Bassicks

Both the consoles and the instructors' office chairs of this Link simulator for the Air Force's F106A All-Weather Interceptor Aircraft roll on Bassick casters.

The trainer is making it easier and faster for the Air Force to turn out accomplished pilots in every phase of F106A operations—from take-off through intercept, attack and return to base. And this is just one of the vital defense projects Bassick casters are aiding.



Grandpappy was "in the groove," too

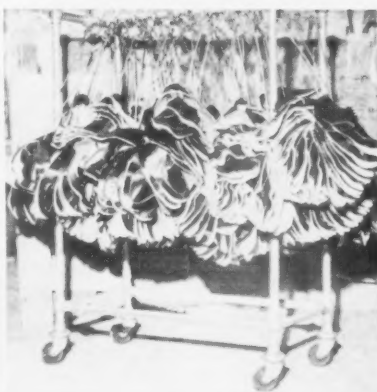
This steam crane, from a mechanical dictionary of 85 years ago, was capable of handling up to 80 tons. Note that it moved, despite the tremendous weight involved, on grooved wheels similar to those of famous Bassick "Grooved-Wheel" casters (above) of today. Bassick grooved-wheels move on simple inverted angle-iron tracks for maximum load capacity and can also be used directly on the floor.



600 Bassicks survive 3 years at hard labor

... with only 6 tire replacements, and only 12 spring replacements

Ride now, walk later



These shoe uppers, at Endicott Johnson Corporation, ride in style on this Bassick caster equipped rack. The Bassick "H99" casters used here feature non-marking "Atlasite" wheels.

The female threaded pipe socket, adapting the double ball bearing swivel caster to the rack, is only one of a wide variety of plate and stem constructions available.

Here's a record we're proud of:

The casters on these trucks, used for moving oil drums at Socony Mobil's Paulsboro, N. J., Refinery have seen three years of hard use traveling approximately 2,000 miles a year under loads generally as high as 4,000 pounds per cart. During that time only six caster tires and only 12 springs have had to be replaced.

The casters used are 10" Bassick Series "FS" swivel and "FT" rigid—designed especially for power-towing applications with a 7" swivel bearing diameter.

There are other pluses too: Socony engineers say the shock absorbing "Floating Hubs" have reduced noise levels and have practically eliminated packages falling off the trailers.

Can "Floating Hubs" solve a handling (or maintenance) problem in your plant?

See your Bassick Distributor . . . he gets around and learns the latest materials-handling techniques. He can help you with Bassick casters. And he keeps the most popular Bassick casters in stock for immediate delivery.

1.45

THE
BASSICK COMPANY
BRIDGEPORT 5, CONN.
IN CANADA:
BELLEVILLE, ONT.



Bassick
A DIVISION OF



STEWART-WARNER CORPORATION

Employment Service

BUYER OR SENIOR BUYER

Division of large corporation requires buyer with potential in management. Background should include military procurement, familiarity with government contracts, procurement of machined parts. Education in either mechanical engineering or business administration. State salary. Location—upstate New York.

Write Box 512.

Experience: Ten years purchasing experience in automotive parts, material handling, and sheet metal fabrication. Procurement of ferrous and non-ferrous steels, stampings, machined parts, hardware, welding equipment. Experience in cost reduction systems, value analysis, intra-plant co-ordination, production control, labor-management.

Education: Two years college (Bus. Admin.) evening courses in purchasing, law, production engineering. Am presently enrolled in advance purchasing course.

Will relocate. Prefer East or Southeast. Write: Box 132

Experience: 10 years in newsprint mill, 5 in P.M.S., 5 as senior buyer in purchasing dept.—both with same employer. Familiar with woodlands, mill and general purchasing, P.M.S. accounting, inventory & order control, sales taxes, traffic, expediting, etc. No opportunity for advancement in present position for approx. 15 years. Desire position with opportunity in near future. Age 31.

Education: 2 years and summer school at univ. towards B.A. I.C.S. course in elementary bookkeeping. Above average Stanford Binet results on record at University.

Will relocate. Prefer Western Canada or U.S.A.

Write: Box 138

Experience: Purchasing agent fifteen months—one man office. Assistant P. A. 4½ years. Purchase steel, forgings, castings, water pumps, industrial engines, tubing (ferrous & non-ferrous), MRO supplies, and all other items used in modern machine shop. Eleven years clerical experience. Married. Age 28.

Education: Business College, correspondence courses, and college courses (night classes) in Bus. Admin.

Will relocate. East preferred.

Write: Box 122

Experience: Past ten years spent in storekeeping field both in present position and U. S. Navy, engaged in purchasing and stock control. Desire an organization who will use fully the services and experience I have to offer.

Education: Graduate of Newburgh Free Academy, (Member of Student Council) active in Business Club, etc.

Will relocate.

Write: Box 129

Experience: Thirty years as procurement executive in metal working and electronics industries. Thoroughly versed in value analysis and other modern purchasing concepts. Considerable experience in traffic and material control techniques. Knowledge castings, forgings, stampings, ferrous and non-ferrous metals and electronic components. Capable of contribution to profitable operation in volume or job shop manufacturing. Resume on request.

Education: High school and night school.

Will relocate.

Write: Box 131

Experience: Four years negotiation and administration of multimillion dollar contracts for nuclear reactors and reactor components. Have also purchased capital equipment, raw materials, machined parts, chemicals, analytical services, special materials, and research services. Familiar with governmental agency procurement regulations and approval procedures. Five years chemical research and laboratory administration.

Education: B. S. in Industrial Chemistry, Case Institute of Technology. Two years night law school. MBA, Harvard Business School.

Will relocate.

Write: Box 127.

HOW TO APPLY

There is no charge for this service, which is available both to purchasing personnel seeking employment and to employers requiring replacements or additions to their purchasing depts. Please specify the form you want—employer or applicant. Address all correspondence (requests for forms, and answers to advertisements) to Box No., Employment Service, Purchasing Magazine, 205 East 42nd St., New York 17.

Experience: 12 years line and staff experience with 2 top metal fabricating companies. Experienced in all phases of purchasing work, including receiving, expediting, inventory control, value analysis and volume purchasing of all types of material. Thoroughly experienced in large plant methods and procedures. Familiar with both IBM and EDP systems. Will consider position as materials manager or director of purchasing. Age 35.

Education: College graduate (BSC) Major in Bus. Admin. Minor in Accounting. Numerous specialized courses in purchasing, inventory and production control, manufacturing, and business management, plus value analysis instructor's certificate.

Will relocate. Prefer west, midwest or southwest.

Write: Box 117

Experience: 5 years as assistant P.A.—9 years as P.A. for major lithographic firms operating on a national scale. Well grounded in stock control & contract negotiation. Purchased all items for one plant and coordinated purchasing activities for two others. Trained personnel and directed setup of new purchasing departments.

Education: 1½ years college—Night school in accounting—P.A. Assn. educational courses. Home study courses in purchasing law—materials management and inventory control.

Will relocate.

Write: Box 120

Experience: 10 yrs. supervisory purch.—5 as P.A. 5 as asst. & buyer. Est. inv. control, cost savings procedures & systems. Other duties: prod. sched. & expedit. Knowledge of govt. contracts, sub-contract mfg., raw metals, elect. & electronic comp, molded prods., die & sand castings, power trans. equip., mech. controls, refractories, capital equip., etc. Age 37.

Education: 2 years College—Bus. Admin. & Purch.

Will relocate. Prefer Chicago Area.

Write: Box 118

Experience: 6 yrs., comprehensive background in all phases of purchasing and procurement; currently asst. P.A. for multi-million dollar furniture manufacture. Previous assignments as buyer, expeditor and inventory control. Familiar with cost reduction, value analysis and procurement of production, tool room and office supplies. Looking for a challenge. Age 29, married.

Education: 2 yrs. college, night school courses, blue print reading, bookkeeping, and industrial traffic management.

Will relocate. Prefer Midwest.

Write: Box 135

(Please turn to page 220)



This mark tells you a product is made of modern, dependable Steel.



USS Tiger Brand Slings handle awkward loads safely

Pipe is awkward to handle and it can be dangerous. This hook-up using two slipnoose Tiger Slings exerts a strong grip on the pipe. It prevents slippage and keeps the load well balanced.

Your lifting jobs may be different but there are literally hundreds of USS Tiger Wire Rope Slings designed to give you any lift you need.

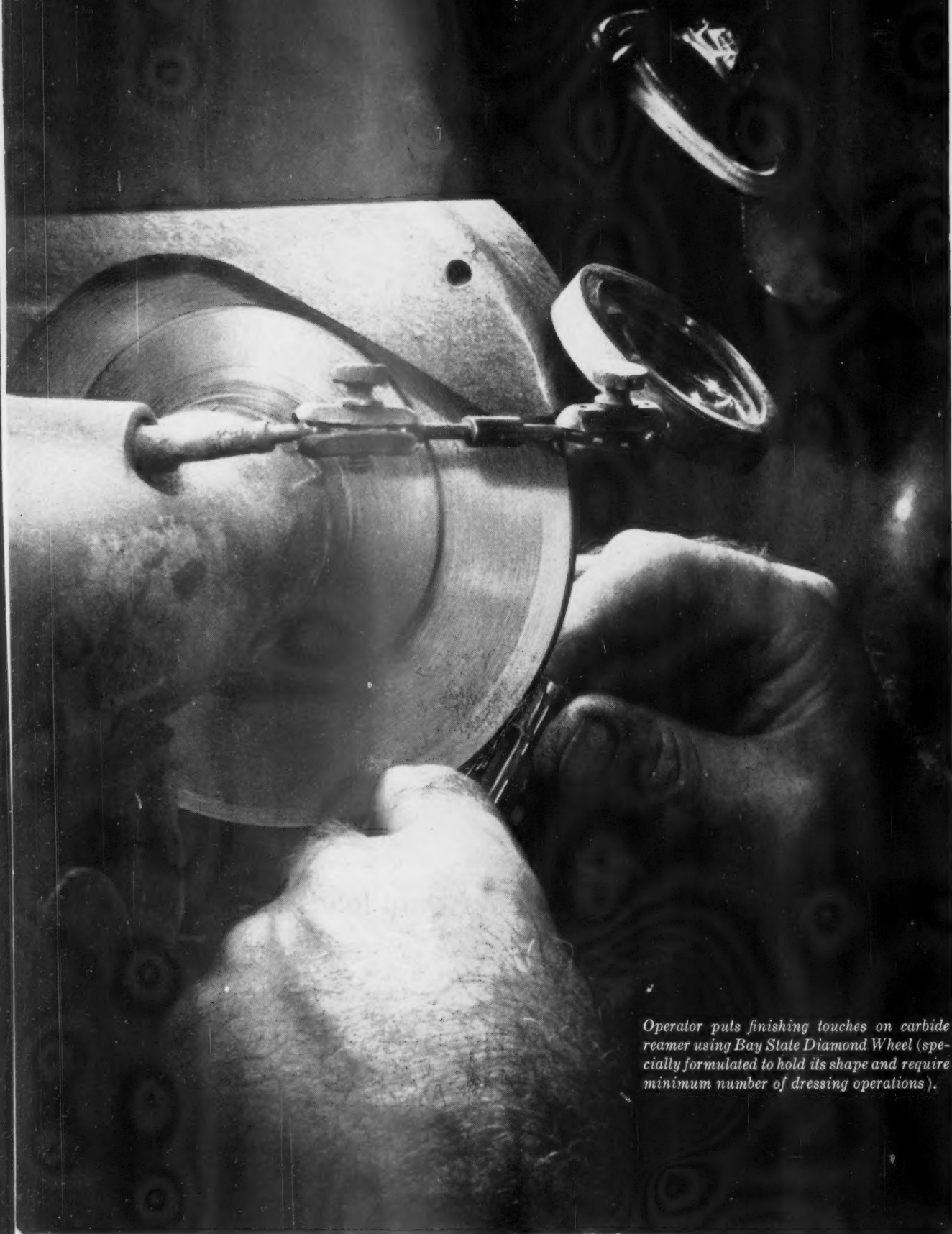
Strong, tough Tiger Brand Rope makes strong, tough Tiger Brand slings... and the various operations of swaging, splicing, braiding or socketing are performed by workmen skilled in the trade. *Many USS Tiger Brand Distributors* are set up to give you quick deliveries on a wide variety of slings. Engineering services are available where specialty slings are required.

For more information on USS Tiger Slings, contact American Steel and Wire, Dept. 1271, Rockefeller Building, Cleveland 13, Ohio, or your nearest Tiger Brand Distributor. USS and Tiger Brand are registered trademarks.

**American Steel and Wire
Division of
United States Steel**



Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
Tennessee Coal & Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, Distributors Abroad



Operator puts finishing touches on carbide reamer using Bay State Diamond Wheel (specially formulated to hold its shape and require minimum number of dressing operations).

BAY STATE TEAMWORK PAYS OFF AGAIN with a new diamond wheel for SEVERANCE TOOL

When you use a substantial number of diamond wheels every month, it pays to keep a steely eye on costs. That's why a man like Purchasing Agent Millard Wells of the Severance Tool Industries, Saginaw, Michigan, insists on continuous testing for every cost factor in the book.

The specific problem was to develop an improved diamond wheel for close-tolerance grinding of Severance Carbide Reamers and at the same time to reduce time-consuming, material-wasting dressing operations.

Figuring out the details of the new wheel was a team operation right from the beginning. Bay State's Sales Engineering Staff and the Quality Control people in Westboro worked very closely with Jack Sullivan, of distributor Saginaw Supply Corporation and with Severance's Purchasing Agent Millard Wells.

Result: A specification that increased cutting speed and wheel life with substantially reduced dressing requirements . . . and a beautiful demonstration of the benefits that accrue when two companies get together that both insist on quality right down the line.

Your Bay State distributor or direct representative can show you one of the most efficient lines of diamond wheels in the world manufactured with either man-made or natural diamonds . . . as well as offer you the services of a group of specialists whose knowledge of hard-materials grinding techniques is unparalleled. *Better grinding at lower cost . . . that is our business.*



Severance Purchasing Agent Millard Wells (left) and Bay State Distributor's representative Jack Sullivan (of Saginaw Supply Corp., Saginaw, Michigan) examine typical carbide tools which require diamond grinding.



BAY STATE ABRASIVES



Bay State Abrasive Products Co., Westboro, Massachusetts.

In Canada: Bay State Abrasive Products Co., (Canada) Ltd.,
Brantford, Ontario.

Branch Offices: Chicago, Cleveland, Detroit, Los Angeles, Pittsburgh.

Distributors: All principal cities.

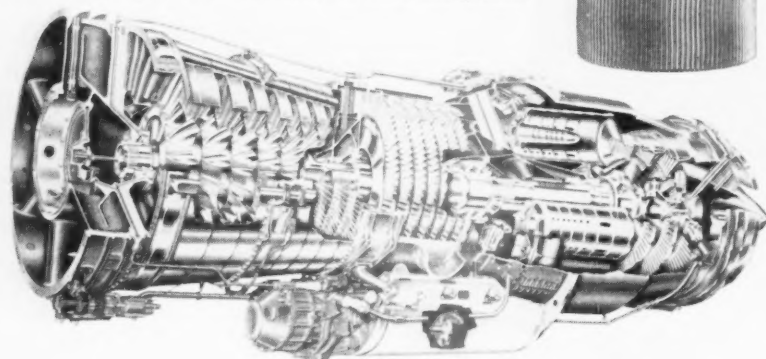
For More Facts Write No. 294 on Information Card—Last Page



PRECISION for top-flight performance!

Rigid PRATT & WHITNEY AIRCRAFT precision requirements spell *performance* . . . top-flight performance. Reason: The future is at stake. And that future can well ride on gear teeth. Since 1940, PRATT & WHITNEY AIRCRAFT gear tolerances have been Perkins' standards . . . for commercial gears as well as aircraft. Such precision pays off in longer wear, greater efficiency, lower maintenance cost. That type of precision can pay off for you, too.

Famous PRATT & WHITNEY AIRCRAFT J57 Jet Engine, power plant for Air Force "Snark" guided missile, is geared for both commercial and military performance by Perkins. Typical tolerances on Perkins gears: .0004 tooth to tooth; .0015 cumulative; .0005 on involute. On spline: .0006 tooth to tooth; .0008 cumulative; .0005 on involute. Most Perkins gears are carburized, hardened and ground.



YOURS ON REQUEST
Folder showing custom gears Perkins has made (from various materials) for aircraft, automotive, precision instruments, home appliances, portable and machine tools, and other products. Includes Perkins facilities for producing various gear types and sizes. Write today.



PERKINS

MACHINE AND GEAR CO.

Dept. 1G West Springfield, Mass.

Telephone: REpublic 7-4751

For More Facts Write No. 295 on Information Card—Last Page

Employment Service

(Continued from page 216)

Experience: Ten years purchasing agent in valve manufacturing companies. Can set up dept., all responsibility. Sales background—trucks, tractors and automobiles. Also aircraft company experience. Personal drive, logical thinker, humility, communicate well, excellent health. Age 45.

Education: Bus. Admin. 2½ years parochial university & business school.

Will relocate. West, Pacific Northwest or Southwest.

Write: Box 113

Experience: 2 years experience in procurement as buyer for medium size manufacturing corporation. Responsible for electronics, automotive, manufacturing, and printing procurement. Detailed resume available upon request. Seeking growth potential. Age—middle twenties.

Education: BBA. in administrative management, S.M.U. Recipient of scholarship given by Purchasing Agents Association. President of Sigma Iota Epsilon (honorary management fraternity). President of Society for Advancement of Management.

Will relocate. Yes.

Write: Box 124

Experience: 5 yrs.—Purchasing agent, production control/material control supervisor in electronics with small to medium size firms in Southern California.

Education: 2 years college.

Will relocate.

Write: Box 123

Experience: Nine months as industrial engineer. Duties: inventory control, product analysis, and material specifications. Seek career opportunity in purchasing with stable consumer goods industry. Am young, married and ambitious.

Education: A.A.S. General Bus. & Econ., nearly completed evening program for B.S. Industrial Mgmt. Electronic course in service.

Will relocate.

Write: Box 133

Experience: 8 years in packaging, printing, office supplies, and equipment purchasing. Last two years as P. A. for nationally known company supervising staff of six. Have reached peak in present company which is family owned and operated. Seeking growth situation.

Education: B.S. in Industrial Mgmt. Have completed 28 credits towards Master of Bus. Admin.

Will relocate.

Write: Box 137

(Please turn to page 224)

The new generation of U.S. autos fends off corrosion . . .



GUARDED BY GALVANIZED STEEL

Use of galvanized steel sheets in the automotive industry has increased by more than 700% since 1954—and more automotive applications are on the way.

As a result of this growing addition to Detroit's diet, both consumers and manufacturers are benefiting. To car owners, every pound of galvanized steel means more complete corrosion protection, added durability and savings in maintenance. To manufacturers, galvanized steel's simplified fabricating procedures bring reduced costs. Head and tail lamp housings, for instance, formerly required five or six steps when zinc plated or painted after stamping. Now they are moved direct from press to assembly line with their tight zinc coatings completely undamaged by fabri-

cation. This also applies to side members, rocker panels, front and rear rails and cross members.

WEIRKOTE, IN PARTICULAR! One of the leading galvanized steels, Weirkote is widely used in the latest model automobiles. To the inherent strength, economy and versatility of steel, Weirkote adds enduring zinc protection via the modern continuous process. As a result, it can be worked to the very limits of the steel base without chipping or peeling. And it assures you long-lasting protection against corrosion. It is manufactured by two National Steel divisions, Weirton Steel Company and Midwest Steel Corporation. Write Weirton Steel Company, Weirton, West Virginia, for further Weirkote details.



MIDWEST STEEL
Portage, Indiana

WEIRTON STEEL
Weirton, West Virginia



divisions of
NATIONAL STEEL CORPORATION

For More Facts Write No. 296 on Information Card—Last Page



BIG THINGS...LITTLE

These, and a thousand other things, have found the perfect way to go traveling—comfortably safe in a St. Regis® container. In fact, there's hardly anything you can name for which St. Regis can't design the right corrugated box.

And, if you think we have designs on *your* product—you're right! We make it our business to ask for new op-

portunities to design boxes that give your product greatest protection at lowest cost. You may need "difficult" boxes... boxes with full printing... convertible to display units... or boxes that weather the weather. If the box you need doesn't exist, we'll create and test it. And it will be the sturdiest, safest box your product ever traveled in.

ANYTHING GOES...IN A



THINGS...LIVE THINGS

You can step into this imaginative world of protective packaging at any of our nation-wide plants. Each has a staff of creative design engineers, modern production techniques, and years of experience in virtually any industry you can name. Corrugated boxes for big things, little things—*anything*—are designed and made at these St. Regis plants:

Birmingham, Ala. • Fullerton, Calif. • Salinas, Calif. • Jacksonville, Fla. • Atlanta, Ga. • Chicago, Ill. • Dubuque, Ia. • Hagerstown, Md. • Minneapolis, Minn. • Jersey City, N.J. • Buffalo, N.Y. • Albany, N.Y. • Canton, O. • Cleveland, O. • Coshocton, O. • Newark, O. • Crafton, Pa. • Mt. Wolf, Pa. • Pittsburgh, Pa. • Dallas, Texas • Garland, Texas • Houston, Texas • Tacoma, Wash. • Grafton, W.Va. • Milwaukee, Wis. Or write: Container Div., St. Regis Paper Company, 150 E. 42 St., N.Y. 17, N.Y.

ST. REGIS CONTAINER

For More Facts Write No. 297 on Information Card—Last Page

Snap-on PRECISION PLIERS and CUTTERS

for Electronic Assembly



E-701 Plier. Slim-tapered 2 1/4" jaw.
Non-serrated 1/8" tip.
E-703 Plier with serrated tips.

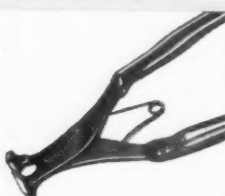
- ▶ Selected alloy steels with jaws specially heat-treated for maximum strength
- ▶ Snap-on pliers are heat-treated clear through — not surface-hardened only.
- ▶ Broached and ground joint surfaces for smooth, snug fit . . . eliminate binding.
- ▶ Drilled and reamed rivet holes for easy operation.
- ▶ Controlled riveting for accurate alignment and mating of jaw tips.



E-702 Plier. Slim-tapered 2 1/4" bent jaws. Non-serrated 1/8" tips.
E-704 Plier with serrated tips.



E-705 End Cutter. 4 1/2" long. Jaws 1/4" long. 1/4" flush-cutting tip blades.



E-706 End Nipper. 6 1/4" long. Flush-cutting blades 1/8" wide.

- ▶ Cutter blades are hand-filed for accurate meshing.
- ▶ Overlapping cutting edges shear better, last longer.
- ▶ Models available with plastic-coated handles, plastic jaw inserts.
- ▶ Many other sizes and types available.



No. 5 Gripping Plier. 4 1/2" long. Thin jaws with fine teeth.



No. 184 Diagonal Cutter. 4 1/4" long. 1/32" jaw length.



No. 184D Cutter. 4 1/4" long. Semi-flush-cutting action.



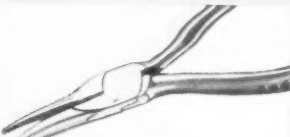
No. 184DD Cutter. Full flush-cutting action.



No. 85 Long-Nose Diagonal Cutter. 5 1/4" long. 1/4" jaws.



No. 94 Needle Npse Plier. 4 1/2" long. 1/32" serrated jaws.



Needle Nose Pliers with serrated jaws.
No. 095. 5 1/4" long. 1/32" jaws.
No. 95. 6" long. 1/32" jaws.
No. 096. 6 1/4" long. 2/32" jaws.



No. 951S Gripper-Cutter. 5 1/2" long. 1 1/4" jaws with cutter 1/2" from tip.

Write for new Bulletin 173A listing wide range of small tools particularly suited for electronic assembly.

FOR ALL INDUSTRY
SNAP-ON TOOLS

8019-K 28th AVENUE • KENOSHA, WISCONSIN
For More Facts Write No. 300 on Information Card—Last Page

Employment Service

(Continued from page 220)

Experience: 14 yrs. heavy mgmt. and purchasing experience for major west coast firm. Multi-million purchasing record with thousands of savings. Know So. Calif. conditions thoroughly. Lower five figures.

Education: High School and Jr. College. Numerous special purchasing courses.

Will relocate. Prefer So. Calif.

Write: Box 128

Experience: 5 years, including P.A. in all phases of procurement to MIL specs as well as high commercial requirements & import-export. Highly diversified background easily adaptable to most mfg. needs. Strong in plastics, metals, rubber, tooling, finishes, packaging, etc., as related to prime contracts & OEM.

Education: 5 years college, Bus. Admin. & related. Resume upon request.

Will relocate.

Write: Box 134

Experience: 3 years industrial P. A. for large company, 7 years supervisory experience in purchasing and production control. Thoroughly familiar with latest purchasing and inventory control techniques and materials management concept. Age 32.

Education: B.S. in electrical engineering, correspondence course in Bus. Mgmt., Alexander Hamilton Institute.

Will relocate. Prefer South or Southwest.

Write: Box 136

Experience: 3 years purchasing manager major communications equipment manufacturer. 4 years buyer, supervisor and staff with major electronic manufacturer. Production control, inventory control, purchasing. Budgets and planning.

Education: B.S. Ind. Mgt. with EE option at top engineering college. Major corporate training program.

Will relocate.

Write: Box 139

Experience: Purchasing manager international multi-plant company Latin America 5 years. 5 years industrial costs and audit; 4 years public acctg.; 3 years office mgr. and asst. treas.; OMC major WWII. Age 49, strong administrative organizational experience. Capable managing small company, purchasing or export department.

Education: 2 years college, special tax course, acctg. correspondence, army officers candidate, engineering and operations, logistics. Member Institute Internal Auditors and NAPA.

Will relocate.

Write: Box 142

ACE

HARD RUBBER

...the original plastic
is the most **ECONOMICAL**

■ **HARD RUBBER IS NOT ONLY ECONOMICAL TO PURCHASE ... IT'S ECONOMICAL TO USE BECAUSE ...**

... it easily lends itself to almost every form and shape. Experienced engineers at American Hard Rubber will help you to select the *right* one for the most efficient and economical production of *your* part. It might be best to:

Mold your part. Start with a molding compound for large quantities or simple parts. Molded units as long as 10 ft. have been produced. Hollow parts are often molded by a special blown process. Flat shapes can start with unvulcanized rubber which is then die-pressed between sheets of tin foil. Complex parts with metal inserts are easily produced.

Machine your part. Start with extruded hard rubber rods and tubes. All operations from simple cut-off to complex screw-machine work are economical. Standard rod diameters range from 1/16 to 4 1/2 in.; standard tube i.d.'s from 1/16 to 3 in.

Stamp your part. Start with flat sheets and punch simple, accurate, and economical parts. For extremely close tolerances use a grade treated for dimensional stability. Sheet is available in many grades, in thicknesses from 0.007 to 4 in. Tolerances on 1-in. sheet are normally $-0.000 + 0.032$ in.; closer for thinner sheet.

Extrude your part. In addition to standard extruded shapes, special cross-sections can be produced by American Hard Rubber for only the extra cost of the dies.

Hand-wrap your part. More economical for large, regular parts and small production runs. Calendered sheet is cut to shape and wrapped around metal cores before being vulcanized. Practically any specifications for strength, chemical and electrical properties can be met.

Finish your part. Quickly and simply finish by dry or wet sanding, pumicing and polishing, or grinding. The finished part has a pleasant, high polish.



Complex chemical filter molded in three pieces, is durable, prevents contamination of chemicals.



Machined from hard rubber tube, this part is typical of many jobs that can be done with relatively inexpensive extruded shapes.



Tiny, intricate tube socket (enlarged 1 1/2 times) is made from high dielectric X-2-B hard rubber sheet. Saves in both materials costs and production costs.



Large fittings made by shaping tacky, unvulcanized hard rubber sheet around mandrels prior to vulcanization.

Contact American Hard Rubber today. Tell us **what** and we'll tell you **how**.

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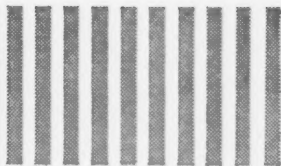
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city, zone & state

November 20, 1961 (Expires 1-16-62)



Wire cloth so finely woven it screens out light!

Openings in this woven wire cloth are so tiny they're specified in microns—millionths of an inch. This is Tyler stainless steel wire cloth, 325 x 2300 mesh, used in filtering fuel in aircraft engines. Whatever your special needs in wire cloth, Tyler can supply you from the world's broadest line—covering thousands of different specifications.

TYLER CUTS YOUR COST OF SCREENING

- Requirements matched from world's broadest line of wire cloth
- Fast shipments from the industry's largest inventory
- Technical service backed by unique Customer Service Laboratory.

THE W. S. TYLER COMPANY Cleveland 14, Ohio • OFFICES: Atlanta • Boston • Chicago • Dallas • Los Angeles • New York • Philadelphia • Pittsburgh • Salt Lake City • San Francisco • The W. S. Tyler Company of Canada, Limited, St. Catharines, Ontario • OFFICE: Montreal

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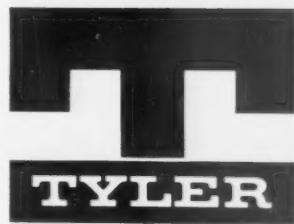
FABRICATED SCREEN SECTIONS TO FIT EVERY VIBRATING SCREEN MADE

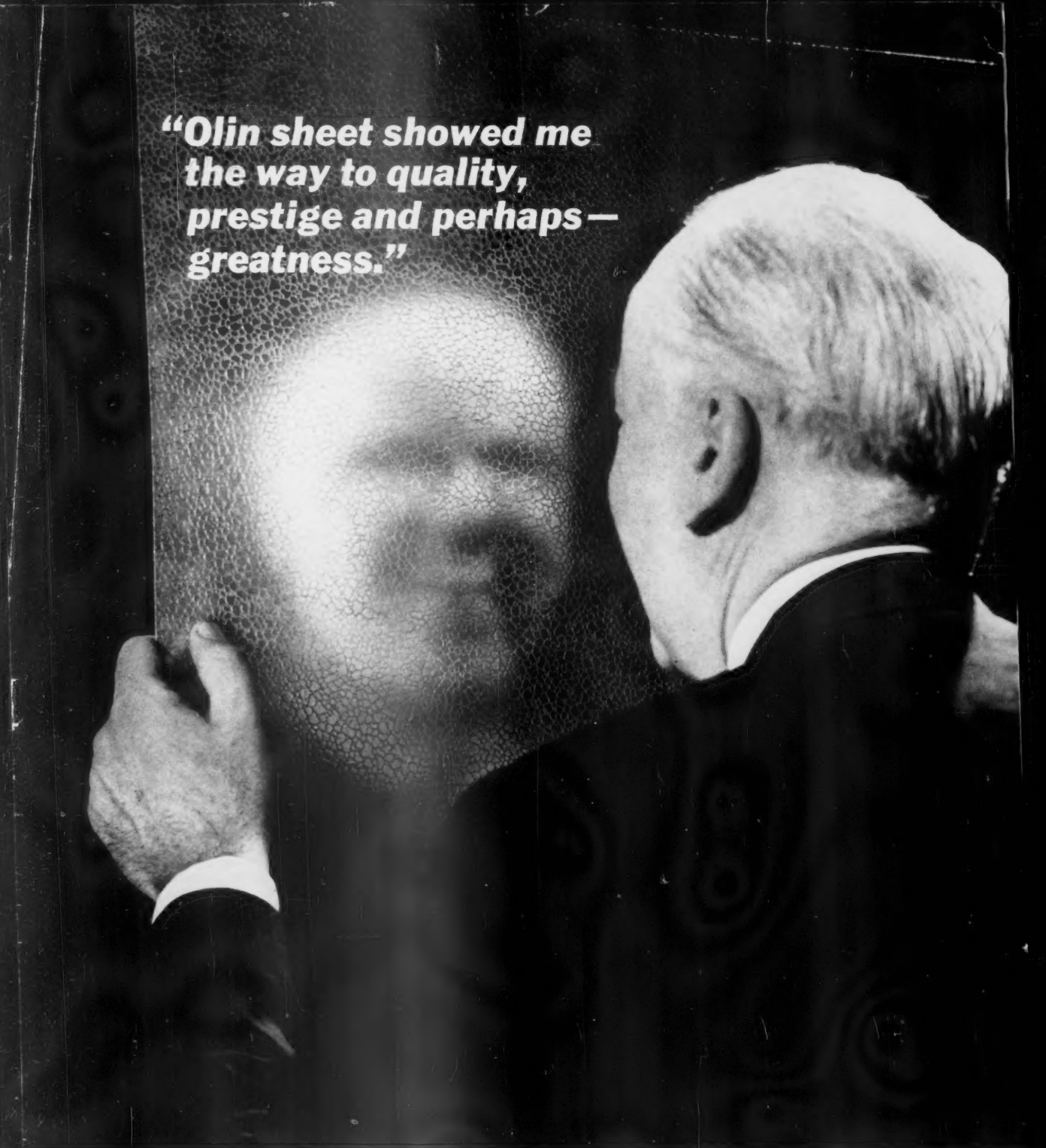
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the way to quality,
prestige and perhaps—
greatness."**

"I was proud of my company's product. I liked my aluminum supplier. But I believe in keeping up with the times. When my design engineers praised Olin's creative thinking in special metal applications to make products more saleable, I thought I'd talk to them. Olin recommended a pebble grain sheet — claimed it would give better eye-appeal after painting. Nothing new about pebble grain pattern on aluminum—but something very new about Olin's version—richer, sharper definition, greater three-dimensional effect. Now my product makes my competitors' seem commonplace by comparison. Olin has made me a man apart because they cared." Nobody thinks in aluminum better than Olin—from alloys to marketing. Want to talk to our consultants? Call your Olin Aluminum Distributor or Sales Office.

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